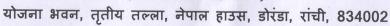
पत्रांक:- DHEsec 5/AFFIL GEN COL-KU AFFI-18/2020/HTESD.....

झारखण्ड सरकार उच्च एवं तकनीकी शिक्षा विभाग (उच्च शिक्षा निदेशालय)



W. SINGHBHUM JHARKHAND

प्रेषक,

निदेशक, उच्च शिक्षा, झारखण्ड, राँची।

सेवा में.

कुलसचिव,

कोल्हान विश्वविद्यालय, चाईबासा।

राँची, दिनांक:-/

विषय:-

संत अगस्तीन कॉलेज ,मनोहरपुर को शैक्षणिक सत्र 2022-2026 2023-2027 एवं 2024-2028 के लिए अस्थायी संबंधन दीर्घिकरण प्रदान करने के संबंध में।

प्रसंग:-

आपका पत्रांक- 1490/22 दिनांक- 28.08.2022

महाशय,

निदेशानुसार उपर्युक्त विषयक प्रासंगिक पत्र के आलोक में सूचित करना है की राज्य सरकार, संत अगस्तीन कॉलेज ,मनोहरपुर को विश्वविद्यालय की अनुशंसा के आलोक में स्नातक स्तरीय पाठ्यक्रम में बिना किसी वित्तीय भार के एवं इंटर रहित अस्थायी संबंधन दीर्घीकरण/नवसंबंधन के प्रस्ताव में समीक्षोपरांत झारखण्ड राज्य विश्वविद्यालय अधिनियम, 2000 की धारा 04(19) के तहत प्रदत्त शक्तियों का प्रयोग करते हुए अधोलिखित विवरणी के अनुसार कंडिका-2 में अंकित शर्तों के अधीन स्तीकृति प्रदान की है।

	गर कराउकरा-द न जाकरा राता कर जवान स्वाकृता प्रदान कर	6	
क्र0	संकाय/स्तर/ विषय	सत्र	अभ्युक्ति
1.	B.A(H/G) Geography, Psychology, Anthropology, Sociology, Philosophy & Mundari.	सत्र 2022-2026, 2023-2027 तथा 2024-2028 के लिए	अस्थायी संबंधन दीर्घिकरण
	In all the proposed major + Adv Major courses along with all the subject required for subject mapping (common courses, introductory courses, minor courses and research courses) as per the frame work for FYUGP		

2. शत्त:-

यह महाविद्यालय नवसंबंधन /संबंधन दीर्घीकरण हेतु पत्रांक- BSU-16/86-1096 (जी0एस01) दिनांकi) 19.04.1986 एवं संबंधन संबंधी नवगठित परिनियम द्वारा निर्धारित शर्ती एवं यू०जी०सी० द्वारा निर्धारित शर्ती को सदैव पुरा करेगा।

विश्वविद्यालय के निरीक्षण प्रतिवेदन में अधिरोपित शर्तों एवं पूर्व में विभाग द्वारा दिये गए शर्तों का अनुपालन ii)

करना अनिवार्य होगा।

महाविद्यालय को यू०जी०सी० अधिनियम (यथा संशोधित) की धारा-5 के तहत NAAC Accreditation कराना iii) आवश्यक होगा।

आरक्षण नियमों का अक्षरश: अनुपालन करना अनिवार्य होगा। iv)

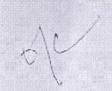
> विश्वासभाजन, ह0/-(स्रज कुमार)

निदेशक, उच्च शिक्षा।

ज्ञापांक-DHEsec 5/AFFIL GEN COL-KU AFFI-18/2020/HTESD - 1844 .../ राँची, दिनांक- <u>09 11 | 2022</u>/ प्रतिलिपि:- प्राचार्य, संत अगस्तीन कॉलेज ,मनोहरपुर को सूचनार्थ एवं आवश्यक कार्यार्थ प्रेषित।

निदेशक, उच्च शिक्षा।







अधिस्चना

मानव संसाधन विकास विभाग, झारखण्ड सरकार के पत्रांक 5/म0 /-83 /03 -1256 दिनांक 09.01.2008 के अनुसार संत अंगस्तीन महाविद्यालय, मनोहरपुर को विश्वविद्यालय पत्रांक जी ई 4393 दिनांक 26,10,2007 द्वारा की गई अनुशंसा के आलोक में रनात्तक कला, वाणिज्य एवं विज्ञान संकाय में पास एवं प्रतिष्ठा स्तर में बिना वित्तीय भार के निम्नांकित शत्तों के अधीन स्थायी संबंधन पर सहमति प्रदान की गई है-

क्रम सं0	रांकाय एवं स्तर	विषय
1.	र्नात्तक कला	(1) हिन्दी (2) इतिहास
	(पास एवं प्रतिष्ठा	(3) राजनीतिशास्त्र (4) अर्थशास्त्र
	रतर)	(5) अंग्रेजी (कुल पाँचविषय)
2.	स्नात्तक विज्ञान	(1) भौतिक शास्त्र (2) रसायन शास्त्र
	(पास एवं प्रतिष्ठा	(3) गणित (4) घोटनी (5) जुलॉजी
	स्तर) .	(कुल पाँच विषय)
3.	स्नात्तक वाणिज्य	(1) सभी अनिवार्य समूह
	(पास एवं प्रतिष्ठा	
	स्तर)	
	•	

-1. his

- (1) यह महाविद्यालय प्रतिविषय पुरतको की संख्या 500 (पांच सी) स्तिरियत करेगा।
- (2) कला / विज्ञान के प्रयोगिक विषयों में यंत्र एवं उपकरण यथेष्ट कर लिया जायेगा।
- (3) कंडिका 2 एवं 3 की शर्ते अगर दो वर्षों में पूरी नहीं की गई तो संबंधन वापस लिया जा सकता है तथा इन शत्तों को पूरा नहीं करने पर वित्त रहित शिक्षा अधिनियम, 2004 के प्रावधानों के तहत

ACTIMO PRINCIPAL ST. AUGUSTINE'S COLDER पाने हेतु आवेदन मही वे सकेंगे।

> ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM

UR. W SINGHB!



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- 4) यह महादिद्यालय अखील भारतीय विज्ञापन के द्वारा परिनियम संख्या — 30 जिसे कुलाबिपति के पत्रांक बीठ एसठ यूठ 16 / 86—1098 जी एस (1) दिनाक 19.04.86 द्वारा अनुमोदित किया गया है, के द्वारा गाउँत कमिटि से वयनित शिक्षकों से ही सेदा होगा। यह आदेश मात्र उन शिक्षकों पर पर लागू होगा, जिसमें नाम की अनुशंसा कॉलेज सेवा आयोग के द्वारा नहीं की गई है।
- (5) यह महाविद्यालय प्रयंधन परिनियम संख्या 30 जिसे कि कुलाधिपति के पत्रांक बीठ एसठ यूठ 16 / 86 —1098 जी ए (1) दिनांक 19.04.86 द्वारा अनुमोदित किया गया है, में दिये गये सभी शर्त्ता को पूरा करेगा।

कुलपति के आदेशानुसार

ह0 / - कुलसचिव राँची वि० वि० राँची

ज्ञापांक जीई । 101- 108

दिनांक . 20:2:2008

प्रतिशिपि :--

- (1) संकायाध्यक्ष, स्वाधिक विज्ञान, मानविकी संक्रम् विज्ञान संकाय हुन ना विज्ञा संभ-विव विव राँची.
 - (2) परीक्षा नियंत्रक, राँची वि० वि०, राँची,
 - (3) स० कुं ल०, पंजियनशाखा, राँची वि० वि०, राँची,
 - (4) वित्त पदाधिकारी, राँची वि० वि०, राँची,

(5) प्रार्चाय, संत अगस्तीन महाविद्यालय, मनोहरपुर का सूबनार्थ अग्रसारित।

> रु . म. भगते १९-२ : ४४ कुलसंचिव

राँची वि० वि० राँची ।

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ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM

ACTING PRINCIPAL



KOLHANUNIVERSTE CHAIBASA WEST SBETTBELLIM HARKHAND PIN-833201 CONTACT NO.- 06582-255274

Rd no. 20121. 1864....122

Date 21/11/22

अधिसूचना

उच्च एवं तकनीकी शिक्षा विभाग (उच्च शिक्षा निदेशालय), झारखण्ड सरकार राँची के पत्रांक DHEsec 5/AFFI GEN COL-KU AFFI-18/2020/HTESD-1844 दिनांक 09.11.2022 के आलोक में झारखण्ड राज्य विश्वविद्यालय अधिनियम 2000 की धारा 4(19) में वर्णित प्रावधानों के अधीन St. Augustine College, Manoharpur को स्नातक पाठयक्रम के सत्र 2022-26, 2023-27 एवं 2024-28 के लिए बिना किसी वित्तीय भार के एवं इंग्टर रहित शर्ताधीन अस्थायी संबंधन दीर्घीकरण की रवीकति पदान की जाती है।

क्र०सं	संकाय / स्तर / विषय	The second secon	
1	B.A. (H/G) Geography, Psychology, Anthropology, Sociology, Philosophy & Mundari In all the proposed major + Adv major courses along with all the subject required for subject mapping (common courses, introductory courses, minor courses and research courses as per the frame work for FYUGP)	2022-26, 2023- 27 & 2024-28	अस्थायी संबंधन् दीधीकरण

शर्तः--

- 1. महाविद्यालय नवसंबंधन/संबंधन दीर्घीकरण हेतु पत्रांक- BSU-16/86-1096 (जी०एस० 1) दिनांक 19.04.1986 एवं संबंधन संबंधी नवगठित परिनियम द्वारा निर्धारित शत्तों एवं यु०जी०सी० द्वारा निर्धारित शतों को सदैव पूरा करेगा।
- 2. महाविद्यालय द्वारा विश्वविद्यालय के निरीक्षण प्रतिवेदन में दिए गए सुझाव एवं शत्तों का अनुपालन समय सीमा के अन्दर किया जायेगा। (छायाप्रति संलग्न)
- 3. महाविद्यालय को यु०जी०सी० अधिनियम (यथा संशोधित) की धारा-5 के तहत NAAC Accreditation कराना आवश्यक होगा।

4. महाविद्यालय आरक्षण नियमों का अक्षरणः अनुपालन सनिश्चित करेगा।

क्लपति के आदेशानुसार E0/-

कलसचिव

कोल्हान विश्वविद्यालय, चाईवासा

दिनांक 21.11.2022

प्रतिलिपि :

- 1. प्राचार्य, St. Augustine College, Manoharpur.
- 2. क्लपति / प्रति क्लपति के सहायक को उनके सूचनार्थ।
- 3. परीक्षा नियन्नक / उपकुलसचिव को सूचनार्थ एवं कार्यार्थ।
- 4. छात्र कल्याण संकायाध्यक्ष को संचनार्थ।

. राचिका में।

ACTING PRINCIPAL

ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM

कुलसचिव कोल्हान विश्वविद्यालय, चाईवासा



ST. AUGUSTINE'S COLLEGE, MANOHARPUR

WEST SINGHBHUM (JHARKHAND) PIN NO. 833104 (A Religious Minority College) Established by

THE DIOCESE OF CHOTANAGPUR, CHURCH OF NORTH INDIA IN 1978 HARPUR Affiliated to Kolhan University & Recognised by the Govt. of Jharkhand

Academic Calender 2022-23

Sl.No.	Subject	Timeline
1	Reopening of College After Summer Vacation	20/06/2022
2	1st Semester Admission	Last week of June to Last Week of November/ As per Notification of
	Commencement of Class/ Induction or Welcome	
3	2nd Semester	After Re-opening of Summer Vacation
3	4th Semester	After Re-opening of Summer Vacation
	6th Semester	After Re-opening of Summer Vacation
4	Re-Admission	As per Kolhan University, Chaibasa
5	Puja Vacation	4th Week of September-2022
	Internal Examination odd Sem (1st, 3rd, 5th)	2nd Week of November 2022
6	Internal Examination odd Sem (2nd, 4th, 6th)	Second Week of February -2022
Ü	Quarter End Examination (1st, 2nd, 3rd)	As notified by Kolhan University
	Annual Examination Final Semester	As notified by Kolhan University
7	Annual Sports/ Annual Day	28th August 2022
8	Filling up Forms for University	As per Notified Kolhan University
9	Publication of Result(1st ,2nd,3rd,4th,5th & 6th sem.)	As per Notified Kolhan University
10	Total No. of Holidays	115
11	Total no of Teaching Days	More than 180 Days
12	Summer Vacation	25 Days

^{*} The above time line may be modified by the Government when required.

Principal St. Augustine's College, Manoharpur

W. SINGHBHUM

JHARKHAND

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM



ST. AUGUSTINE'S COLLEGE, MANOHARPUR

WEST SINGHBHUM (JHARKHAND) PIN NO. 833104

(A Religious Minority College) Established by

THE DIOCESE OF CHOTANAGPUR, CHURCH OF NORTH INDIA IN 1978 Affiliated to Kolhan University & Recognised by the Govt. of Jharkhand

Common Holidays List for the Year-2022 (As Per Goyt, Order No:-Memo No KU/R/1727/2021, Dated:-18/12/2021)

Sl.No.	Occasion	Date of Celebraton	Day	No. of Holidays excluding Sundays
anuary				
1	New Year's Day	01 Jan	Sat	1
2	Guru Govind Singh Jayanti	05 Jan	Wed	1
3	Sohrai, Makar Sankranti & Tusu Parab	13-15 Jan	Thu- Sat	3
4	Republic Day	26 Jan	Wed	1
ebrua	ury and the same of the same o			
5	Basanta Panchami	5-Feb	Sat	1
6	Hazart Ali Birthday	15-Feb	Tues	1
7	St. Ravidas Jayanti / Maghe Parab	16 Feb-17 Feb	Wed-Thus	2
1arch				
8	Maha Shivaratri	1-Mar	Tue	1
9	Holi, Dolyatra, Baha Parab & Sab-E-Barat	14-19 Mar	Wed-Sat	6
pril				
10	Sarhul	04 -05 Apr	Mon-Tues	2
11	Rama Navami	11- 12 Apr	Mon-Tues	2
12	Ambedkar Jayanti, Mahavir Jayanti, Good Friday, Easter Monday & Vaisakhi	14 -18 Apr	Thus - Mon	4
13	Veer Kunwar Singh Jayanti	23-Apr	Sat	1
14	Last Friday of Ramzan	29-Apr	Wed	1
1ay/J	une			
15	Eid-Ul-Fitra	02-03 May	Mon -Tues	2
16	Budh Purnima	16-May	Mon	1
17	Summer Vacation	21 to 18 June	Sat - Sat	25
18	Hul Diwas	30 June	Thus	1
uly				
19	Rath Yatra	01 July	Fri	1
20	Eid-Ul-Zoha (Bakrid)	11 - 12 July	Mon - Tues	2
21	Hero Parab/ Guru Purnima	13 July	Wed	1
lugus				
22	Last Mondy of Sawan	08 Aug	Mon	1
23	Vishwa Adiwasi Diwas & Muharam	09-10 Aug	Thus - Wed	2
24	Rakshabandan	11 Aug	Thu	1
25	Independence Day	15 Aug	Mon	1
26	Srikrishna Janamastami	19 Aug	Fri	1
27	Ganesh Chaturdashi	31 Aug	Wed	1
epter	nber/ October / November			
28	Karam Parab	05-06 Sep	Sat	2
29	Jomnama & Ananat Chaturdashi	09 -10 Sep	Fri- Sat	2
30	Chehullum & Vishwa karama	16-17 Sep	Fri- Sat	2
31	Kalash Sthapana	26 Sep	Mon	1
32	Durga Puja, Eid-Milad-Ul-Navi, Dhanteras, Dipawali, Sohrai, Bhaiyaduj, Chatth & Gopastmi Mela	30 Sep to 3 Nov	Fri- Thus	30
33	Gurunanak Jayanti & Kartik Purnima	8-9 Nov	Tue- Wed	2
34	Birsa Jayanti & Jharkhand Sthapana Diwas	15-Nov	Tue	1
Decen		1-0 .,0.	1.40	
35	T	22. 21 Dog	Eri Co4	0
33	Christmas Holidays & Winter Vacation	23- 31 Dec	Fri - Sat	8
		Total No.of Holida	iys	115

Note:- 1. Netaji Subhas Jayanti, Ganesh Jayanti and Mahalya falls on Sunday.

2. The Muslim Holidays are subject to variation, depending upon the visibility of the Moon.

3. More than 180 days are avilable for teaching days.

4. More than 45 days are available for Examination purposes (including summer vacation).

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W. SINGHBHUM

JHARKHAND



ST. AUGUSTINE'S COLLEGE, MANOHARF

WEST SINGHBHUM (JHARKHAND) PIN NO. 833104 REPLAND

(A Religious Minority College)
Established by

THE DIOCESE OF CHOTANAGPUR, CHURCH OF NORTH INDIA IN 1978 Affiliated to Kolhan University & Recognised by the Govt. of Jharkhand

(Email-staugustinescoll@gmail.com)

DETAILS EQUIPMENTS OF ACADEMIC PURPOSE

Sl. No.	Equipments	Total
1	Iron/Wood Desk & Bench	260
2	Green Board	16
3	Projector with Screen	01
4	Steel Almira	26
5	Laptop	04
6	Desktop	05
7	Computer Table	10
8	Xerox Machine, Printer with Scanner	02
9	Color Xerox Machine	01
10	Teaching Table with Chair	09
11	Big Table	15
12	Ceiling Fan	51
13	Wall Fan	03
14	Aqua guard	03
15	Generator (30 KV)	01
16	Wi-Fi Extender	02
17	Chalk	18 Box (Each Box 144)
18	Duster	15

Principal St. Augustine's College, Manoharpur

ACTING PRINCIPAL

ST. AUGUSTINE'S COLLEGE

MANOHARPUR, W SINGHBHUM



ST. AUGUSTINE'S COLLEGE, MANOHARPUR

WEST SINGHBHUM (JHARKHAND) PIN NO. 833404 RKHAND (A Religious Minority College)

Established by

THE DIOCESE OF CHOTANAGPUR, CHURCH OF NORTH INDIA IN 1978
Affiliated to Kolhan University & Recognised by the Govt. of Jharkhand

(Email-staugustinescoll@gmail.com) Cont:-7781964714

LIBRARY BOOK STATEMENT

Subject	Reference Book	Text Book
History	173	191
Hindi	156	341
Economics	64	236
Political Science	53	125
English	212	163
Geography	37	61
Anthropology	0	27
Philosophy	54	50
Sociology	0	18
Mundari	0	03
Physics	21	108
Chemistry	02	120
Botany	28	170
Zoology	02	122
Mathematics	20	148
Commerce	86	160
Total	908	2043

Total Nos. of Books: -908+2043 = 2951

IOURNALS

- 1. Competition Books & Magazines 62
- 2. News Paper Per day 4

Principal St. Augustine's College, Manoharpur



CHOICE BASED CREDIT SYSTEM SYLLABUS FOR ANTHROPOLOGY

Kolhan University, Chaibasa (Jharkhand)

BACHELOR OF ARTS (HONS.)

Semester	Subject code	Course Name	Marks	Credit
	CC-1	Foundation of Anthropology (Group-A)	70	04
	CC-2	Indian Anthropology (Group-A)	70	04
I	CC (P) – 1	(T/P)	60	04
1	A.E.C.C-I	MIL Communication	50	02
	G.EI (Theory)	Foundation of Anthropology	70	04
	G.E.(P) -I	(T/P)	30	02
	CC-3 –	Foundation of Anthropology (Group-B)	70	04
	CC-4 -	Indian Anthropology (Group-B)	70	04
II	CC (P) -2	(T/P)	60	04
11	A.E.C.C-II	Env. Science	50	02
	G.EII (Theory)	Indian Anthropology	70	04
	G.E.(P) -II	(T/P)	30	02
	CC-5	Physical Anthropology (Group-A)	70	04
	CC-6	Prehistoric Archeological Anthropology (Group-A)	70	04
***	CC-7	Tribal Culture of India (Group-A)	70	04
III	CC (P) -3	Physical Anthropology Practical	90	06
	S.E.C-I	General Knowledge & Current Affairs	50	02
	G.EIII	Physical Anthropology	70	04
	G.E.(P) -III	(T/P)	30	02

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	CC-8	Physical Anthropology (Group-B)	70	HANDO4
	CC-9	Prehistoric Archeological Anthropology	70	04
		(Group-B)		
	CC-10	Tribal Culture of India (Group-B)	70	04
IV	CC (P) – 4	Prehistoric Archeological Anthropology Practical	90	06
	S.E.C-II	Personality Development	50	02
	G.EIV (Theory)	Research Methodology	70	04
	G.E. (P) -IV	(T/P)	30	02
V	CC-11	Theories in Social Cultural Anthropology	70	04
	CC-12	Research Methodology (Group-A)	70	04
	CC(P) - V	Field Work	60	04
	DSE-1	Introduction to Anthropology	70	04
	DSE-2	Indian Society	70	04
	DSE (P) – I	(T/P)	60	04
VI	CC-13	Research Methodology (Group-B)	70	04
	CC-14	Social cultural change in India	70	04
	CC (P) -VI	(T/P)	60	04
	DSE-3	Indian Culture	70	04
	DSE-4	Project Work	70	04
	DSE (P) –II	(T/P)	60	04

B.A. (Hons.) Ist Semester Paper- CC-1



Foundation of Anthropology, (Group-A)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions(MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- Unit-1 i) Meaning and scope of Anthropology
 - ii) Branches of Anthropology
 - a) Social-Cultural Anthropology
 - b) Physical Biological Anthropology
 - c) Archeological Anthropology
 - d) Linguistic Anthropology

Unit-2 Relationship of Anthropology with other disciplines:

- a) Life Sciences
- b) Earth Sciences
- c) Medical Sciences
- d) Social Sciences
- e) Humanities

Unit-3 Major Concepts in Social-cultural Anthropology:

a) Culture

b) Society

c) Association

d) Institution

e) Tribe

f) Group

g) Social Structure

h) Social Organization

i) Status

j) Role

k) Culture change

1) Acculturation

Unit-4 Marriage

Definition, Types, Preferred, Prescribed and prohibited categories, Monogamy and Polygamy, Endogamy and Exogamy

Unit-5 Family

Definition, Types, Nuclear, Extended and joint family, University of Family, Joint Family System in India.

Recommended Readings:

Upadhyay and Pandey: Tribal Development in India

Upadhyay and Pandey: Janjatiya Vikas

Upadhyay and Pandey: Vivkasatmak Manav Vigyan

Vidyarthi, L.P. (Ed.) : Applied Anthropology in India

Sahu, Chatturbhuj : झारखण्ड की जनजातियाँ

Sahu, chatturbhuj : कंरमाली जनजाति

B.A. (Hons.) 1st Semester



Paper-CC-2

INDIAN ANTHROPOLOGY, (Group-A)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- **Unit-1** India as a socio-cultural entity
- Unit-2 Indian People : racial, ethnic, linguistic and religious element (composition) and distribution of people.
- Unit-3 The basis of Indian Social System : Varna, Ashram, Purushartha, Joint family.
- Unit-4 Caste: Definition, Origin, Characteristics, Caste System in India
- **Unit 5** Indian Village: Characteristics, Unity and extension Jajmani system.

Recommended Readings:

- 1. Agrawal, D.P.: The Archaeology of India.
- 2. Allchin, B & Allchin: The rise of civilization in India and Pakistan
- 3. Sankalia, H.D.: Pre and proto History in India and Pakistan.
- 4. Karve, Irawati: Hindu Society an introduction
- 5. Pandey, Gaya: Indian Anthropology

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B.A. (Hons.) 1st Semester



Paper- CC (P) - I

Full Marks: 60

Internal Assessment

- (A) 06 Assignment full marks 30
- (B) Overall Performance and regularity- 10
- (C) Viva-voce 20



AECC – I (MIL Communication) Total marks - 50

(Made by University)

B.A. (Hons.) 2nd Semester



Paper- CC-3

Foundation of Anthropology, (Group-B)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. $15 \times 2 = 30$ (The questions are to be set from each unit)

Unit-1 Kinship

Definition, Types of Kinship Consanguineous, Affinal, Primary, Categories of Kinship – Primary, Secondary, Tertiary Kinship, Terminology of Kinship-Classificatory, Descriptive, Kin groups – Lineage clan, phratry, Moiety

Unit-2 Economic Anthropology

Modes of Food Production, distribution and Exchange, Concept of Money and Property.

Unit-3 Religion and Magic

Definition, Functions, Theories of Origin of Religious, Functionaries Priest, Pahan, Baiga, Magic – Definition, Types Functions, Relationship with religion and science.

Unit-4 Political Anthropology

Meaning and Scope, Evolution of Political Organization, Band, Tribe Chiefdom, State Law and Justice in Simple Societies.

Unit-5 Fundamentals in linguistic Anthropology

- (a) Speech, Language and Dialect (b) Semantics and Lexicon
 - (c) Phonetics and Phonemics (d) Morphemes and Syntax
 - (e) Sociolinguistics

Recommended Readings

Upadhyay and Pandey : Tribal Development in India

Upadhyay and Pandey : Janjatiya Vikas

Upadhyay and Pandey : Vivkasatmak Manav Vigyan

Vidyarthi, L.P. (Ed.) : Applied Anthropology in India

Sahu, Chatturbhuj : झारखण्ड की जनजातियाँ

Sahu, chatturbhuj : कंरमाली जनजाति

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B.A. (Hons.) 2nd Semester



Paper-CC-4

Indian Anthropology, (Group-B)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

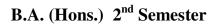
Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- **Unit-1** Tribal situation in India: Biogenetic variability, Linguistic and socioeconomic characteristics, Geography distribution.
- Unit-2 Major concepts in Indian Anthropology : Dominant Caste,
 Sankritinization and Westernization, Sacred Complex,
 Nature-Man Spirit-Complex, Little and Great Tradition,
 Tribe-Caste Continum.
- **Unit-3** Special Constitutional Provisions for SC and ST
- Unit-4 Land and People of Jharkhand: Tribals, Sadan, Post independence immigrants, Cultural types of Tribes in Jharkhand, Changes in Tribal Society and Culture.
- Unit 5 Problems and Welfare measures relating to the tribes of Jharkhand, Land allegation, Education, Drinking, Displacement and rehabilitation, indebtedness, Health and Nutrition, Deforestation, migration.



Recommended Readings:

- 1. Agrawal, D.P.: The Archaeology of India.
- 2. Allchin, B & Allchin: The rise of civilization in India and Pakistan
- 3. Sankalia, H.D.: Pre and proto History in India and Pakistan.
- 4. Karve, Irawati: Kinship Organization in India
- 5. Karve, Irawati: Hindu Society an introduction
- 6. Pandey, Gaya: Indian Anthropology
- 7. Upadhyaya and Pandey: Tribal Development in India
- 8. Sahu, Chatturbhuj: Birhor tribe: dimensions of development
- 9. Sahu, Chatturbhuj: Approaches of tribal development
- 10. Sahu, Chatturbhuj: Tribal culture and Identity





Paper- CC(P) - II

Full Marks: 60

Internal Assessment

- (A) 06 Assignment full marks 30
- (B) Overall Performance and regularity- 10
- (C) Viva-voce 20



AECC – II (ENV.Sci.) Total marks – 50 (Made by University)

B.A. (Hons.) 3rd Semester



Paper- CC-5

Physical/Biological Anthropology, (Group-A)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. $15 \times 2 = 30$ (The questions are to be set from each unit)

- **Unit-1** Meaning, Scope and relations with other branches of Anthropology and with biological, Social and medical science.
- Unit-2 Theory of Organic Evolution Lamarckism, Darwinism, Neo
 Darwinism
- **Unit-3** Synthetic Theory of Evolution.
- **Unit-4** Position of Man in Animal Kingdom.
- **Unit** − **5** Comparative anatomy of Man and Apes.

Recommended Readings:

- 1. S. S. Sarkar: Aboriginal races of India
- 2. Shukla, B.R.K. and Rastogi, S: Physical Anthropology and Human Genetics-An Introduction.
- 3. Sharma, A.N.: Physical Anthropology
- 4. Ember and Ember: Anthropology.
- 5. Buettner Nanusch: Origins of Man

B.A. (Hons.) 3rd Semester



Paper- CC-6

Prehistoric Archeological Anthropology, (Group-A)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- **Unit-1** Pleistocene environment : Glaciations and pluviations.
- **Unit-2** Method of dating: Relative and Absolute Methods
- Unit-3 Lower Paleolithic cultures, pebble tool industries, olduvai, sohan and madrasian, associated human fossils Australopithecus, Homo-erectus.
- Unit-4 Lower Paleolithic cultures, pebble tool industries, olduvai, sohan and madrasian, associated human fossils Australopithecus, Homo- erectus.
- Unit 5 Upper Paleolithic cultures : Salient features, cultures, Art, Religion.

Recommended Readings:

- 1. Agarwal, D.P.: The Archaeology of India
- 2. Allchin, B. and Allchin, F.R.: The rise of civilization of India and Pakistan.
- 3. Banerjee : Iron age in India
- 4. Das, B.M. Outlines of Physical Anthropology
- 5. Sankalia, H.D.: Stone age tools, families and techniques
- 6. Verma, R.K.: Bhartiya Pragaitihasic Sanskriti

SEMESTER – III



Paper- CC-7

Tribal Culture of India (Group-A)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- Unit-I Tribe: definitions, General and specific Characteristics Tribes in India: antiquity, historical, academic, administrative and anthropological Importance. Geographical distribution, various classifications.
- Unit-2 Tribe and caste: Compared and contrasted in their physical and so do- cultural peculiarities. Tribes-caste and rural-urban continuum: myths and realities.
- Unit-3 Classification of tribes based on their economy, occupation and religion. Racial elements among the tribes.
- Unit-4 Tribes: Nomenclature emic and etic difference, Tribal language families in India: language and dialects, bilingual and mltilingual tribal group and areas.
- **Unit-5** Problems of tribal identity. Who is a tribe? Why people opt to be in the list of scheduled tribe? Political, economic, educational and developmental dimensions, Pressure group.

Recommended Readings:



- 1. Majumdar, D.N.: Races and culture of India
- 2. Bose, N. K.: Tribal Life in India
- 3. Pandey Gaya: Bhartiya Janjatiya Sanskriti
- 4. Munda Satyanarayan : जनजातियों का शोषण
- 5. Sahu, Chatturbhuj: झारखण्ड की जनजातियाँ
- 6. Sahu Chatturbhuj : करमाली जनजाति
- 7. Vidyarthi, L.P.: The Maler





Physical Anthropology Practical

Full Marks: 90

Unit-I Identification of human bones from fragments.

Unit-II Craniometric measurement: Direct measurement on 5 human skulls and 5 mandibles

Unit-III Somatometric measurement and somatoscopic observation on 05 individuals

Unit-IV Laboratory Record.

Practical Record

Viva-voce

Recommended Readings:

- 1. Singh, S. P. Kinanthropometry
- 2. Ashley Montagu, M.F.A. Hand Book of Anthropometry, Charles, C. Thomas. Illinois
- 3. Singh, I. P. Bhasin M.K. Anthropometry, Bharti Bhawan
- 4. Weiner, J. S. & Lourie, J. A. Human Biology: A guide to Field Methods, I.B.P. Hand Book No. 9 Blackwell Scientific publication, Oxford.
- 5. Mitra, M. 1990 Prayogik Manav Vigyan Bhag-2, Madhya Pradesh Hindi Granth Academy (in Hindi)
- 6. Mitra, M. & Chaube, R. 2004 Prayogik Manav Vigyan (Sharirik)



S.E.C –I (General Knowledge & Current Affairs) Total Marks – 50 (Made by University)

B.A. (Hons.), 4th Semester



PAPER - CC-8

PHYSICAL/BIOLOGICAL ANTHROPOLOGY (GROUP - B)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. $15 \times 2 = 30$ (The questions are to be set from each unit)

- **Unit 1** Fossils evidences of emergence of man
 - (a) Proto-human phase-Dryopithecus
 - (b) Pre-human phase- Australopithecus
 - (c) Early human phase-Pithecanthropus
 - (d) Late human phase-Neanderthal, Cro-Magnon
- Unit 2 Concept of Race, Criteria of racial classification,Racial classification of India.
- **Unit 3** Hominid Evolution: erect posture and Bipedalism.
- Unit 4 Human growth: Stages of growth, Nutrition and Development.
- Unit 5 Factors affecting growth, Methodologies for growth studies, theories of ageing.

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Books Recommended:-



- 1. S.S. Sarkar: A boriginal races of India
- 2. Shukla, B.R.K and Rastogi, S: Physical Anthropology and Human Genetics-An Introduction.
- 3. Sharma, A.N.: Physical Anthropology
- 4. Ember and Ember: Anthropology
- 5. Buttner-Januch: Origins of Man
- 6. Winchester: A text book of human genetics
- 7. Sahu, Chtturbhuj: शारीरिक मानवविज्ञान

B.A. Honours, 4th Semester



PAPER - CC-9

Prehistoric/Archeological Anthropology (GROUP - B)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

Unit – 1	Mesolithic culture: salient features in India
Unit – 2	Neolithic cultures: Neolithic revolution, emergence of
	human settlement and Farming India.
Unit – 3	Megalithic culture in India: salient features and types.
Unit – 4	Indian valley civilizations
Unit – 5	Megaliths of Jharkhand: Ranchi Hazaribagh, Gumla
	and Lohardaga.

Books Recommended:-

- 1. Agarwal, D.P.: THe Archaeology of India
- 2. Allchin, B. and Allchin, F.R.: The rise of civilization of India and Pakistan
- 3. Banerjee: Iron Age in India
- 4. Das, B.M.: Outlines of Physical Anthropology
- 5. Sankalia, H.D.: Stone age tools, families and techniques
- 6. Verma, R.K.: Bhartiya Pragitihasic Sanskriti
- 7. Ian, Hoddar: Culture the present

B.A. Honours, 4th Semester



PAPER - CC 10

Tribal Culture of India (Group - B)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- Unit 1 Tribal development programmes and welfare schemes. Who benefits? Awareness about govt. schemes. Ground realities of implementation of welfare programmes. Problems of tribal
- Unit 2 Tribes and environment: Tribes and forest: tribes and occupation, tribal economy, dependency on forest, forest policies and tribes, migration and occupational shift. Traditional farming and change.
- Unit-3 Tribal studies: by scholar administrators in British times, western anthropologists and Indian anthropologist.
- Unit 4 Book review of two tribal ethnographic monographs from two culture regions: The Maler by Vidyarthi, Kharia then and Now, Vidyarthi and Upadhyay.

Books Recommended:

- 1. Majumdar, D.N.: Reaces and culture of India
- 2. Bose, N.K.: Tribal Life in India
- 3. Pandey, Gaya: Bhartiya janjatiya sanskriti
- 4. Munda Satyanaryan: जनजातियों का शोषण
- 5. Sahu, Chatturbhuj : झारखण्ड की जनजातियाँ
- 6. Sahu Chatturbhuj : करमाली जनजाति
- 7. Sahu, Chatturbhuj: Tribal culture and Identity
- 8. Vidyarthi, L.P.: The Maler

B.A. (Hons.) 4th Semester



Paper-CC(P)-IV

Full Marks-90

Prehistoric/Archeological Anthropological (Practical)

Identification drawing and description of following non-lithic and agricultural artifacts:-

Hunting-2, agriculture-2

Pottery-1, Fishing-2

Musical-2, Gathering-1

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Practical Record

Viva-voce



S.E.C.-II (Personality Development) Total Marks – 50 (Made by University)

B.A. Honours, 5th Semester



PAPER - CC-11

Theories in Social-Cultural Anthropology

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. $15 \times 2 = 30$ (The questions are to be set from each unit)

Unit – 1	Classical - basic postulates, contribution of L.H. Morgan and E.B. Tylor
Unit – 2	Neo-evolutionism-contribution of V.G. childe, Leslie White and Julia steward
Unit – 3	Diffusion of culture: British, American and continental schools.
Unit – 4	Functionalism:
	a) Biological - contribution of Malinowski
	b) Structural - contribution of Readcliffe brown
Unit – 5	Culture and personality: contributions of Margret Mead, Ruth Benedict, Linton, Kardiner

Books Recommended:-

- Evans-Prichard, E.E. A History of Anthropological Thought f, Faber & Faber,
- Hams, Marvin 1968 Rise of Anthropological Theory f, Routledge & Kegan Paul, London.
- ❖ Jha, Makhan 1983 An Introduction to Anthropological Thought f, Vikas publishing house, Pvt. Ltd., New Delhi.

B.A. Honours, 5th Semester



PAPER - CC-12

Research Methodology (GROUP - A)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

Unit – 1	Science and Anthropology	
Unit – 2	Concept, Theory and Hypothesis: Testing Hypothesis	
Unit – 3	Quantitative and qualitative approaches	
Unit – 4	Field work in Anthropology conducting research- Form	
	of thought, selection of topic, review of earlier studies,	
	objectives, delimitation, methodologies, collection of	
	data, Analysis of data, writing of report.	
Unit – 5	Major Tools of research: Observation, Interview, Case	

Recommended Readings:

- **1.** Danda, Ajit: Research Methodology in Anthropology
- **2.** Fernandez & Tandon: Participatory Research

study, Life history.

3. Ram Ahuja: Research method



Paper- CC (P) -V FIELD WORK

Marks- 60

Each student will have to do field work for a period of one month on a topic assigned under the supervision of a teacher in consultation with the head of the department. For this purpose a student will have to formulate a research design and do field work and submit a report.

Each student will have to do field work for a period of 30 days on a Topic assigned in consultation with head of department under the supervision of a teacher.

Field Report – 40 Marks

Viva-voce – 20 Marks

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Paper - DSE-1

INTRODUCTION TO ANTHROPOLOGY

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- Meaning and scope of Anthropology. it's field, classification, Relationship with sociology, Geography, Psychology, Political Science and Economics.
- 2. Definition of and distinction between (a)- Community, Society and Culture, (b) Group, association and Institution.
- 3. Social Group Definition and characteristics, Types Primary, Secondary, Formal, Informal and Reference.
- 4. Marriage Definition and forms of marriage, dowry and bride-price, incest and its prohibition, traditional forms of Hindu marriage.
- 5. Family Definition and types of family, origin of family, joint family system in India.

Suggested Readings:-

- Gaya Pandey : Social-Cultural Anthropology, Concept,
 Publication, New Delhi
- **2.** L.P. Vidyarthi Tribal Culture of India

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Paper - DSE-2

INDIAN SOCIETY

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- 1. Dimensions of Indian Society: Tribal, Rural, Urban and Industrial.
- **2.** Tribal Society: Economic, Social, Political and Religious aspects of tribal culture.
- 3. Classification of Indian Tribes: Economic, Geographical, Racial and Linguistic.
- 4. Problems of Indian Tribes : (a) Indebtedness (b) Land alienation (c) Education (d) Health (e) Depopulation (f) Deforestation (g) Culture change (Acculturation).

Suggested Readings:

- 1. Nadeem Husnain Tribal Culture
- 2. Ram Ahuja Social problem
- **3.** V.S. Upadhyay and Gaya Pandey: Tribal Development in India.

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Paper- DSE(P)-I

Full Marks: 60

Internal Assessment

- (A) 06 Assignment full marks 30
- (B) Overall Performance and regularity- 10
- (C) Viva-voce 20

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIIR, W SINGHRHUM



PAPER – CC-13

Research Methodology (GROUP - B)

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

Unit-1 Formulation of Research Tolls:

- Observation guide
- Interview guide
- Schedule
- Questionnaire
- G.T. Guide
- Photography guide
- Photography guide
- Case study / Life history guide
- **Module 02** Application of Research Tools in field situation for data collection.
- **Module 03** Classification and Tabulation of data gathered through research tools.
- Module 04 Calculation of Mean, Median and mode of data gathered through research tools.

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM Module – 05 Presentation of data through diagrams & presentation of data through graph.

Recommended Readings:

- **4.** Danda, Ajit: Research Methodology in Anthropology
- 5. Fernandez & Tandon: Participatory Research
- **6.** Ram Ahuja: Research method

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM



PAPER – CC-14

SOCIAL CULTURAL CHANGE IN INDIA

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. $15 \times 2 = 30$ (The questions are to be set from each unit)

Unit - 01 Sanskritization, Hindutization, and Christianization

Unit - 02 Tribalisation, Detribalition, Revitalisation, and

Retribalisation

Unit - 03 Modernization, theories of modernization,

characteristics, Impact of modernization on family,

Society and Culture.

Unit - 04 Urbanization, Modernisation, Westernization,

Secularization and Industrialization Impact on family

society and culture.

Unit - 05 Globalisation : Salient Feature, types, Impact on

family, Economy, Society, culture and Polity.

Books Recommended:

M. N. Srinivas : Social change in India, Social Change in Modern

India.

YOgendra Singh : Modernisation of Indian Tradition.

L. P. Vidyarthi : Tribal Culture of India.

Gaya Pandey : Bhartiya Jana Jatiya Sanskriti

Gaya Pandey : Manay Shastriya Ewam Adhunik

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM



Paper- CC(P)-VI

Full Marks: 60

Internal Assessment

- (A) 06 Assignment full marks 30
- (B) Overall Performance and regularity- 10
- (C) Viva-voce 20

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIIR, W SINGHRHUM



Paper - DSE 3

INDIAN CULTURE

Full Marks: 70 Time: 03 Hours

Group – A: (Compulsory) 10 objectives type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each questions will carry 15 marks. 15 x 2 = 30 (The questions are to be set from each unit)

- 1. Scheduled caste (a) Political, Social, Economic and Ritual status in Hindu Society, (b) Problems of scheduled cast- Social, Economic, Religious and Educational.
- **2.** Constitutional safeguards for Scheduled Castes and Tribes.
- **3.** Traditional Hindu social systems; Purushartha, Ashram, Varna and Jati, joint family and caste system.
- **4.** Major concept in Indian anthropology: (a) Universalization and Parochialization (b) Sacred complex (c) Nature-Man-Spirit complex. (d) Dominant cast (e) Sanskritization (f) Tribe- caste continuum.
- 5. Development of Anthropology in India.

Suggested Readings:-

- **1.** Gaya Pandey : Development Anthropology
- 2. Nadeem Husnain Indian Anthropology
- 3. Ram Ahuja Bhartiya Samaj

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIJR, W SINGHBHUM



Paper - DSE 4

PROJECT WORK

Marks-100

Each student will have to formulate a Research design for dissertation of Project work under the supervision of a teacher in consultation with the head of the department and complete it on the basis of library work or field work independently within stipulated time frame.

Student will have to prepare a Project work Report/dissertation based o library/field data gather independently under the supervision of a teacher in consultation with head of the department.

Project Report

Viva-voce

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Paper- DSE(P)-II

Full Marks: 30

Internal Assessment

- (A) Assignment full marks 10
- (B) Overall Performance and regularity- 10
- (C) Viva-voce 10

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MANOHARPUR, W SINGHBHUM



KOLHAN UNIVERSITY

<u>CHAIBASA</u>



COURSE CURRICULUM FOR POST GRADUATE COURSES UNDER CHOICE BASED CREDIT SYSTEM

B.Sc. Zoology[Honours]

Upgraded Syllabus

WITH EFFECT FROM 2020

Dr. S. B. Lal (Chairperson)

Dr. Uday Singh .(Expert)

Dr. Ravinder Singh

Dr. Anjali Srivastava

Mr. Amar Kumar

Dr. A.P.V.Khalko

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KOLHAN UNIVERSITY, CHAIBASA

B. Sc. Zoology Honours MARKS DISTRIBUTION

Semester	Course	Name of Paper	No. of	Total	Full	TOTAL
			Credits	Credits	Marks	
	CCZOO 1 Theory	Systematics & Animal diversity	4		70	350
I	CCZOO2 Theory	Animal Form and Function of Invertebrates	4		70	
	CCZOO Practical		4		60	
	AECC1 Compulsory	MIL Communication	2) '	50	
	Generic Elective1	GE-1 (Theory)	4	20	50	
	Generic Elective (P)	GE-1 (practical)	2		30	
	CCZOO3 Theory	Cell Biology	4		70	
II	CCZOO4 Theory	Diversity of Chordata	4		70	
	CCZOO Practical		4		60	350
	AECC2 Compulsory	Environmental Science	2		50	
	Generic Elective2	GE-2 (Theory)	4	20	70	
	Generic Elective (P)	GE-2 (practical)	2		30	
	CCZOO5 Theory	Physiology	4		70	

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III	CCZOO6Theory	Endocrinology and Animal Physiology	4		70	NOHARPUR 1
	CCZOO7 Theory	Developmental Biology	4		70	
-	CCZOO Practical		6		90	450
	SEC 1	Current Affairs	2		50	
	Generic Elective-	GE-3 (Theory)	4	26	100	5
	Generic Elective (P)	GE-3 (practical)	2			
IV	CCZOO8 Theory	Genetics	4		70	
	C9Theory	Evolution	4		70	
	C10 Theory	Animal behaviour	4		70	450
	CCZOO Practical		6		90	
	SEC2	Personality Development	2	26	50	
	Generic Elective-	GE-4 (Theory)	4		70	
	Generic Elective	GE-4 (practical)	2		30	
V	CCZOO11Theory	Immunology	4		70	
	CCZOO12	Environmental	4		70	
	Theory	biology & toxicology				
	CCZOO Practical	1	4		60	400

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KOLHAN UNIVERSIT

	DSE1Theory	Economic Zoology	4		70	CHARPIN
	DSE2 Theory	Biostatistics	4		70	
	DSE Practical		4	24	60	
VI	CCZOO13Theory	Molecular biology &	4		70	00
		Diotochnology				
		Biotechnology				
	CCZOO14 Theory	Microbiology & Medical Zoology	4		70	400
	Theory	Wedlear Zoology				
	CCZOO Practical		4		60	
	DSE3Theory	Toxicology	4		70	
	DSE3Practical		2	24	30	
	DSE4	Project	6		100	
		TOTAL		140		2400

> CIA:- Continuous Internal Assessment.

[➤] **AECC**:- Ability Enhancement Compulsory Course.

> SEC: Skill Enhancement Course.

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Details of courses under B.Sc. (Zoology Honours)

	Course	Theory+ practical
ı.	Core Course	
	(14 Papers)	14x4=56
	Core course Practical/Tutorial*	
	(14 Papers)	14x2=28
II.	Elective Course (8 papers) A.1. Discipline Specific Elective (4 papers)	4x4=16
	A.2. Discipline Selective Elective Practical/Tutorial* (4 Papers)	4x2=8
	B.1. Generic Elective/Interdisciplinary (4 Papers)	4x4=16
	B.2. Generic Elective Practical/Tutorial* (4 Papers)	4x4=10 4x2=8

Optional Dissertation or project work in place of one Discipline Specific Elective paper (6 Credits) in 6th Semester

III. Ability Enhancement Courses

1. Ability Enhancement Compulsory Courses (AECC)

(2 Papers of 2 Credits each) 2x2=4

Environmental Science

English/ MIL Communication

2. Skill Enhancement Courses (SEC)

(Minimum 2) 2x2=4



PROPOSED SYLLABI FOR CHOICE BASED CREDIT SYSTEM B.Sc. Hons. In Zoology (Six Semester Course)

SEMESTER-I

COURSE	Code Of	Name of Papers	Credit	Total
	Papers			Credit
	CZOOL-1	Systematics & Animal diversity	04	
	CZOOL-2	Animal Form and Function of	04	
CORE Course		Invertebrates		12
	P-1	Practical based in CZOOL -1 & 2	04	
AECC	AECC-1	Communicative English	02	02
Ability		Basic of computers /		
Enhancement				
Compulsory				
Course				
Generic Elective	GE-1	GE-1 (Theory)	04	06
		,		
		GE-1(Practical)	02	
			Total	20
		A Y	credits	

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Semester - II

COURSE	Code Of Papers	Name of Papers	Credit	Total Credit
Core Course	CZOOL-3	Cell Biology	04	12
	CZOOL-4	Diversity of Chordata	04	
	P-2	Practical based on CZOOL-3 & 4	04	
AECC	AECC-2	Environmental Science	02	02
Ability				
Enhancement				
Compulsory				
Course				
Generic Elective	GE-2	GE-2 (Theory)) 04	06
		GE-2(Practical)	02	
			Total	20

Semester -III

COURSE	Code Of	Name of Papers	Credit	Total
	Papers			Credit
Core Course	GT-0-0-	Physiology	04	
	CZOOL-5			
		Endocrinology and Animal	04	
	CZOOL-6	Physiology		18
		Developmental Biology	04	
	CZOOL-7			
	P-3	Practical based on CZOOL-5,6&7	06	
(B)	SEC-1	Current Affairs	02	02
Skill Enhancement				
Course				
Generic Elective	GE-3	GE-3 (Theory)	04(T)	06
		GE-3 (Practical)	02	
			Total	26

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Semester-IV

COURSE	Code Of	Name of Papers	Credit	Total
	Papers			Credit
Core Course	CZOOL-8	Genetics	04	
	CZOOL-9	Evolution	04	18
	CZOOL-10	Animal behaviour	04	
	P-4	Practical based on CZOOL-8,9 & 10	06	
(B)	SEC-2	Personality Development	02	02
Skill Enhancement Course				
Generic Elective	GE-4	GE-4 (Theory)	04	06
		GE-4 (Practical)	02	
			Total	26

SEMESTER - V

COURSE	Code Of Papers	Name of Papers	Credit	Total Credit
Core Course	CZOOL-11	Immunology	04	
	CZOOL-12	Environmental biology & toxicology	04	12
	P-5	Practical based on CZOOL-11& 12	04	
Discipline specific Elective	DSE-1	Economic Zoology	04	
	DSE-2	Biostatistics	04	12
	P-6	Practical based on DSE-1 & DSE-2	04	
			Total	24

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SEMESTER- VI

COURSE	Code Of Papers	Name of Papers	Credit	Total Credit
Core Course	CZOOL-13	Molecular biology &	04	
		Biotechnology		
	CZOOL-14	Microbiology & Medical Zoology	04	12
	P-74	Practical based on CZOOL-11& 12	04	
Discipline specific Elective	DSE-3	Toxicology	04	
	DSE-4	Project Work	04	12
	P-8	Practical based on DSE-3	04	12
			Total	24



GRADES AND GRADE POINTS

LATTER GRADE	GRADE POINT	MARKS PERCENTAGE
O(Outstanding)	10	100%
A++(Excellent)	9	90% to 99.99%
A+(Extremely Good)	8	80% to 89.99 %
A (Very Good)	7.5	75% to 79.99 %
B+(Good)	7	70% to 74.99 %
B(Above Average)	6	60% to 69.99 %
C(Average)	5	50% to 59.99 %
P(Pass)	4	40 % to 49.99 %
F(Fail)	0	Less than 40%
Ab(Absent)	0	





EXAMINATION FRAMEWORK FOR B.Sc [Honours]

ESUE

- ❖ There will be a uniform pattern of question for all course and of all the programs . the question pattern will be divided in to three groups .
- **❖** In which **GROUP** I is objective type and is COMPULSORY [10 X 2 = 20].
- **❖** A total of **SEVEN** Question will be set in **group B** out of which only **FOUR** questions to be attended Consisting of "05" marks each.
- **❖** In **GROUP C** there will be a total of **FOUR** Question and only **TWO** shall have to be answered by the examinees carrying "15" marks each.

SIA

- **❖** Written Examination :- 15 Marks
- **❖** Co-curricular activities and Regularity: 05 Marks
- Project Work / Seasonal Work / Field Study / Viva Voce :- 10 Marks

[NOTE :-SIA :-Sessional Internal Assessment & ESUE :- End Semester University Examination]

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PROPOSED SYLLABUS FOR CHOICE BASED CREDIT SYSTEM

B.Sc Honours in Zoology (Six Semester Course) 1ST SEMETER





B.Sc. (Hons.) Zoology

Semester-I, Core Course (CZOOL-1)

Systematics and Animal Diversity

Credit 4

Full Marks = 70 Hours of Teaching = 60 hrs.

There will be two groups of questions. Group A is compulsory and will contain two questions. Question No.1 will be very short answer type consisting of ten questions of 1 mark each. Question No.2 will be short answer type of 5 marks. Group B will contain descriptive type five questions of fifteen marks each, out of which any three are to answer.

Note: There may be subdivisions in each question asked in Theory Examinations

UNIT-1 Systematics

- 1.1. Binomial & Trinomial nomenclature,
- 1.2. Concept of Species.
- 1.3. New trends in animal Taxonomy.
- 1.4. Biological Classification

UNIT-2 Non-Chordates

- General characters and classification of the following up to orders with examples showing distinctive / adaptive features
 - 2.1. Protozoans
 - 2.2. Poriferans
 - 2.3. Cnidarians
 - 2.4. Ctenophorans
 - 2.5. Platyhelminths
 - 2.6. Annelids.
 - 2.7.Arthropoda
 - 2.8. Molluscs
 - 2.9. Echinoderms

UNIT-3

- 3.1. Life cycle of Fasciola hepatica and Ascaris
- 3.2. Parasitic Adaptation in Helminthes

UNIT-4 General Characters and affinities of

- 4.1. Ctenophora- Evolutionary Significance
- 4.2. Onychophora- Evolutionary Significance

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Semester -1, Core Course (CZOOL-2)

Animal Form and Function of Invertebrates

Credit 4

Full Marks = 70Hours of Teaching = $4 \times 15 = 60$ hrs.

UNIT-1 Phylum Protozoa

- 1.1 Locomotion, Osmoregulation and reproduction in protozoa.
- 1.2 Nutrition in protozoa.

UNIT-2 Phylum Porifera

- 2.1 Canal system in Porifera
- 2.2 Skeletal system of porifera.

UNIT-3 Phylum Coelenterate

- 3.1 Obelia -Life cycle and metagenesis
- 3.2 Polymorphisms in hydrozoa
- 3.3 Coral and Coral Reefs -types, formation, distribution and economic importance.

UNIT-4 Phylum Platyhelminthes

4.1 Life cycle of Fasciola hepatica

UNIT-5 Phylum Annelida

5.1 Excretion in Annelida

UNIT-6 Phylum Arthropoda

- 6.1 Respiration in Arthropods
- 6.2 Larval forms of Crustacea

UNIT-7 Phylum Mollusca

- 7.1 Respiration in Pila and Unio
- 7.2 Torsion and Detorsion in Gastropods

UNIT-8 Phylum Echinodermata.

- 8.1 Water vascular System in Echinoderms
- 8.2 Larval forms of echinoderms

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P-1 Practical Based on (CZOOL-1 & CZOOL-2)

Full Marks = 60

<u>ITEM</u>	MARKS DISTRIBUTION
1. Dissection.	10
2. Spotting (10)	30
3. Whole mount	05
✓ Nephridia of earthworm.	
✓ Statocyst of palaemon.	
4. Practical Record	10
5. Viva Voce	05



P-1 Practical Based on (CZOOL-1 & CZOOL-2) <u>Details</u>

Credit 4

Hours of Practical: 4X15=60 hrs.

1. Dissection :-

- ✓ Nervous system of earthworm.
- ✓ Nervous system of palaemon .
- ✓ Nervous system in pila.

2. Whole mount:-Spotting

- ✓ Nephridia & Ovary of earthworm.
- ✓ Statocyst of Palaemon.

3. Systematics and Animal Diversity: spotting

- 1. Study of Museum Specimens of animals
 - ✓ Sycon,
 - ✓ Fasciola(as an example of triploblastic acoelomate animal),
 - ✓ Ascaris(as an example of triploblastic pseudocoelomate animal),
 - ✓ Hirudinaria (as an example of triploblastic schizocoelomate animal),
- 2. Study of the following through permanent slides
 - ✓ Paramecium Slide (WM)
 - ✓ Hydra (as an example of diploblastic animal)
 - ✓ Gemmules of sponges
 - ✓ Conjugation in Paramecium, ,
 - ✓ Nauplius, Zoea larvae, Bipinnaria, Redia Cercaria etc.

4. Dissection & Mounting:-

- 1. Dissection of Digestive and nervous system of Earthworm
- 2. Mounting of nephridia, ovary of earth worm
- 3. Study and mounting of cephalic appendages of Palaemon
- 4. Mounting of statocyst of Palaemon



<u>Recommended Books</u>

- 1. Dalela & Sharma: Animal Taxonomy and Museology (1976, Jai PrakashNath).
- 2. Kapoor: Theory and Practicals of Animal Taxonomy (1988, Oxford & IBH).
- 3. Simpson: Principles of Animal Taxonomy (1962, Oxford).
- 4. Roymahoney: Laboratory Techniques in Zoology (1966, Butterworths).
- 5. Mayer & Ashlock: Principles of Systematic Zoology (1991, McGraw Hill)
- 6. Boolotian & Stiles: College Zoology (10thed 1981, Macmillan)
- 7. Campbell & Reece: Biology (7thed 2005, Pearson)
- 8. Dorit, Walker & Barnes: Zoology (1991, Saunders)
- 9. Taylor, Green & Stout: Biological Sciences (3rded. 2005, Cambridge)
- 10. Mader: Biology (9thed. 2007, W.C. Brown)
- 11. Marshall & Williams: Textbook of Zoology, Vo
- 12. Parker & Haswell, 7th ed. 1972, Macmillan)
- 13. Nigam: Biology of Non-chordates (1997, S Chand)
- 14. Parker & Haswell: Text Book of Zoology, Vol. II (2005, Macmillan)
- 15. Purves et al: Life-the Science of Biology, (7thed. 2004, Sinauer)
- 16. Starr: Biology, Concepts and Applications (1991, Wadsworth)
- 17.. Tortora and Anagnostakos: Principles of Anatomy and Physiology (6thed. 1986, Harper & Row).
- 18. Villee, Walker & Baranes: General Zoology (5thed 1979, Saunders)
- 19.. Wolfe: Biology the Foundations (1987, Wadsworth)
- 20. . Schmidt Nielson: Animal Physiology (5thed. 2005, Cambridge)
- 21.. Arms and Camp: Biology (4thed. 1995)
- 22. Barnes, R.D. (1982). Invertebrate Zoology, V Edition. Holt Saunders International Edition.
- 23. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). The Invertebrates: A New Synthesis, III Edition, Blackwell Science
- 24. Barrington, E.J.W. (1979). Invertebrate Structure and Functions. II Edition, E.L.B.S. and Nelson
- 25. Boradale, L.A. and Potts, E.A. (1961). Invertebrates: A Manual for the use of Students. Asia Publishing Home.
- 26. Singh, S. Keshari S. and Abhishek, K.S. (2016). Medical Zoology and Parasitology, Jharkhand Jharokha, Classical Publishing Company.

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PROPOSED SYLLABUS FOR CHOICE BASED CREDIT SYSTEM

B.Sc Honours in Zoology (Six Semester Course) IInd SEMETER





B.Sc. (Hons.) Zoology

Semester II , Core Course (CZOOL-3)

Diversity of Chordate

Full Marks = 70

Credit-4 Hours of Teaching: - 4X15=60 hrs.

UNIT-1 Introduction to Chordata:

General characters and outline classification

UNIT-2 Protochordates:

- 2.1 General account & affinities of Hemichordata , Urochordates, Cephalochordates,
- 2.2 Retrogressive metamorphosis in Urochordates (Herdmania).

UNIT-3 Agnatha:-

3.1 Silent features, classification up to orders an affinities of Cyclostomes.

UNIT-4 Fishes/Pisces:

- 4.1 Gill structure and Respiration in Chodrichthyes and Osteichthyes
- 4.2 Accessory Respiratory system of fishes.

UNIT-5 Amphibia(Classification):-

- 5.1 Parental Care of Amphibia.
- 5.2 Origin & evolution of amphibians,
- 5.3 Neoteny with special reference to Axolotl larvae.

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UNIT-6 Reptilia :- (Classification)

ZOOLOGY HONS

- 6.1 Biting & feeding mechanism of Snakes.
- 6.2 Poison-Apparatus, Venom in Ophidians

UNIT-7 Aves:-

- 7.1 Origin of birds,
- 7.2 Archaeopteryx a connecting link,
- 7.3 Flight adaption and migration in birds

UNIT-8 Mammals :-

8.1 General account of Affinities of Prototheria and Metatheria

UNIT -9 Comparative Anatomy

9.1 Comparative anatomy of heart, integument and aortic Arches in vertebrates



Semester II, Core Course (CZOOL-4) Cell Biology

Full Marks = 70

Hours of Teaching :- 4X15=60

Credit-4

UNIT-1 The Cell and its Organization

- **1.1** Introduction to cell theory
- 1.2 Structure and function of plasma membrane
- 1.3 Endo-membrane system (endoplasmic reticulum, Golgi complex, lysosome), Protein Sorting, , Polymorphism in Lysosome
- 1.4 Structure and function of Mitochondria, Role in Oxidative Phosphorylation
- 1.5 Structure of prokaryotic & Eukaryotic cells.

UNIT-2 Nucleus

- **2.1** Introduction to polytene and lampbrush chromosomes, Aberration[structural change]
- 2.2 Organisation of Chromatin, Nucleosome, Euchromatin and Heterochromatin
- 2.3 Nucleolus

UNIT-3 Cell reproduction

- **3.1** Basis feature of cell cycle and its regulation
- 3.2 Mitosis & Meiosis

UNIT-4 Elementary idea of cancer

4.1 Oneogenes, Metastasis,

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4.2 Apoptosis

UNIT-5 Cytoskeleton

5.1 Structure and function: Microtubules, Microfilament, and Intermediate filaments.

UNIT-6 Transport Across Plasma Membrane

- **6.1** Active and Passive transport
- **6.2** Facilitated transport
- **6.3** Modification of Plasma Membrane (Cell junctions: Occluding junctions (Tight junctions), anchoring junctions (desmosomes) and communicating junctions (gap junctions).

UNIT-7 Cell Signalling

7.1 Role of Second Messenger (cAMP).





P-2 Practical based on CZOOL-3 & CZOOL-4

Full Marks = 60

<u>ITEM</u>	MARKS DISTRIBUTION
1. Dissection.	10
2. Spotting (10)	30
3. Mounting of Scale of Fishes	05
4. Slides Preparation	05
5. Practical Record	05
6. Viva Voce	05



P-2 Practical based on CZOOL-3 & CZOOL-4

Working hours -60

- 1. Dissection to show afferent and efferent branchial arteries of Scoliodon or Bony Fish.
- 2. Mounting:-
 - Mounting of Scale of Fishes, [Scoliodon , Bony Fishes]
- 3. Slide Preparation:
 - Preparation of mitotic slides from onion root tips, Grasshopper Testis.
 - Study of Blood cells through slide preparation.
- 4. Study of slides of Unicellular Eukaryotic cell -Amoeba, Paramoecium
- 5. Study of various stages of cell division through permanent slides-Mitosis and Meiosis.
- 6. Study of Museum Specimens:-
 - Protochordata: Balanoglossus, Herdmania, Branchiostoma(Amphioxus)
 - Agnatha :- Petromyzon, Myxine
 - Fishes :- Scoliodon, Torpedo, Chimaera, Mystus, Heteropneustes, Labeo,
 Exocoetus, Echeneis, Anguilla, Hippocampus, Anabas, Tetraden
 - Amphibia :- Ichthyophis, Necturus, Bufo, Hyla, Alytes, Salamandra
 - Reptilia :- Chelone, Hemidactylus, Varanus, Uromastix, Chamaeleon, , Draco, Bungarus, Vipera, Naja, Hydrophis Key for Identification of poisonous and nonpoisonous snakes
 - Aves: Study of six common birds from different orders. Types of beaks and claws
 - Mammalia :- Bat (Insectivorous and Frugivorous), Funambulus, Loris



<u>Recommended Books</u>

Cell Biology

- 1. Alberts et al: Essential Cell Biology (1998, Garland)
- 2. Alberts et al: Molecular Biology of the Cell (2008, Garland)
- 4. Karp: Cell and Molecular Biology (2008, John Wiley)
- 5. Lodish et al: Molecular Cell Biology (2008, Freeman)204
- 6. Pollard & Earnshaw: Cell Biology (2002, Saunders)
- 7. Cooper and Hausman: The Cell A Molecular approach (2007, Sinauer)
- 8. De Robertis, E.D.P. and De Robertis, E.M.F. (2006). Cell and Molecular Biology. VIII Edition. Lippincott Williams and Wilkins, Philadelphia.

Vertebrate Zoology

- 1. Nigam: Biology of Chordates (1997, S Chand)
- 2. Hoar: General and Comparative physiology (7thed. 2005), Indian reprint.
- 3. Miller & Harley: Zoology (6thed. 2005, W.C. Brown
- 4. Vertebrate R.l. Kotpal

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PROPOSED SYLLABUS FOR CHOICE BASED CREDIT SYSTEM

B.Sc Honours in Zoology (Six Semester Course) IIIrd SEMETER

CZOOL - 5 Mammalian Physiology Credit -5(T) + 1(P)

CZOOL - 7 Developmental Biology Credit -5(T) + 1(P)



Semester:- III

CZOOL-5:- Mammalian Physiology

Full Marks = 70 Total Teaching hrs: 75

UNIT-1. Respiration

- 1.1 Mechanism and regulation of breathing
- 1.2 Transport of oxygen and carbon dioxide
- 1.3 Histology of trachea and lung

UNIT-2. Circulation

- 2.1 Composition and function of blood.
- 2.2 Structure and function of Hb.
- 2.3 Blood groups and Rh factor
- 2.4 Homoepoesis
- 2.5 Blood coagulation

UNIT3. Nutrition and Digestion

3.1. Digestion of carbohydrates, proteins and fats in mammals

UNIT-4. Excretion

4.1. Strucure of Kidney & function.

UNIT-5. Nervous System

5.1 Structure and types of Neuron

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- 5.2 Conduction of Nerve impulse through Axon and Synapse
- 5.3 Reflex Action

UNIT-6. Reproduction

- 6.1 Histological details of testes and functions
- 6.2 Histological details of ovary and functions
- 6.3 Reproductive Cycle
- 6.4 Methodology of Contraception in Male and Female

UNIT-7. Muscles

- 7.1 Histology of different types of muscles
- 7.2 Ultra structure of skeletal muscle
- 7.3 Molecular and chemical basis of muscle contraction



CZOOL:- 6 Endocrinology and Animal Physiology

Teaching Hrs.75

UNIT-1.Hormonal Messenger:

- 1.1 Hormones and its classification
- 1.2 Neurotransmitters
- 1.3 Mode of hormone action
- 1.4 Neurosecretion and Neurohormone

UNIT -2 Structure and function of endocrine glands

- 2.1 Pituitary
- 2.2 Thyroid
- 2.3 Adrenal
- 2.4. Pancreas, Pineal and Parathyroid

UNIT-3 Endocrine Disorders:

- 3.1. Goitre,
- 3.2. Cushing's Disease,
- 3.3. Addison's Disease

UNIT-4 Tissues:-

4.1. Structure, location, classification and functions of Epithelial, Connective & Muscular tissue.

UNIT-5 Bone and Cartilage



CZOOL:-7:-Developmental Biology

Full Marks = 70

Teaching Hrs. 75

UNIT-1 Gametogenesis and Fertilization

- 1.1 Spermatogenesis and Oogenesis
- 1.2 Pre fertilization Events: Attraction of gametes, Acrosomal Reaction,
- 1.3 Post fertilization events- Prevention of Polyspermy, Cortical reaction

UNIT-2 Early Embryonic Development

- 2.1 Types of vertebrate egg
- 2.2 Patterns of cleavage
- 2.3 Gastrulation, morphogenetic movements

UNIT-3 Late Embryonic Development

- 3.1. Extra embryonic membranes in chick
- 3.2. Placenta (Structure Type and function)

UNIT-4 Post Embryonic Development

- 4.1. Metamorphosis in frog
- 4.2. Regeneration (Epimorphosis, morphallaxis and compensatory regeneration (with one example each)
 - 4.3. Concepts of Ageing

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UNIT-5 Implications of Developmental Biology

- 5.1 In vitro fertilization,
- 5.2 Stem cell culture (ESC), Amniocentesis,

UNIT-6 Embroynic Induction

- 6.1 Organizer's Concept
- 6.2 Fate Maps (Techniques)



Practical on Paper: - CZOOL-5, CZOOL-6 & CZOOL-7

Total Practical hours -90

Mammalian Physiology (15 marks)

- 1. Preparation of Haemin Crystal
- 2. RBC count by using haemocytometer
- 3. Estimation of Haemoglobin using Sahil's method
- 4. Record of blood pressure by Sphygmomanometer
- 5. Study of permanent slide of transverse section of organs:
- 6.Lung, Stomach, liver, kidney, intestine

Endocrinology and Animal Physiology (10 marks)

1. Study of permanent slide of Endocrine gland: Thyroid, Islets of Langerhans ,Adrenal, Pituitary, Testis , Ovary

Developmental Biology (20 marks)

- 1. Study of permanent Slide of Frog Embryo (W.M)
- 2. Study of permanent slide of chick embryo (W.M) Primitive streak (13 and 18 hours),
- 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation (Hamilton and Hamburger stages
- 3. Study of Life cycle through Models/specimens of Silk worm, Lac Insect/Honey bee.

Class Work And Records (5marks)

Viva Voce (10 marks)



Recommended Books

Physiology

- 1. Nielson: Animal Physiology Adaptation and Environment (5th ed. 2008, Cambridge)
- 2. Marshall and Hughes: Physiology of Mammals and Vertebrates (2nd ed. 1980, Cambridge)
- 3. Hoar: General and Comparative Physiology (3rd ed., 1987, Prentice Hall)
- 4. Prosser: Comparative Animal Physiology (4th ed. 1991, Satish Book)
- 5. C.C.Chaterjee Medical physiology
- 6. Guyton- a book on medical physiology

Endocrinology

- 1. Hadley: Endocrinology (5th ed. 2000, Prentice Hall)
- 2. Turner and Bagnara: General Endocrinology, 6th ed.1984, Saunders)

Developmental Biology

- 1. Alberts et al. Molecular Biology of the Cell (2008, Garland)
- 2. Balinsky: An Introduction to Embryology (1981, CBS)
- 3. Gilbert: Developmental Biology (8th ed., 2006, Sinauer)
- 4. Wolpert: Principles of Development (3rd ed. 2007, Oxford)



PROPOSED SYLLABUS FOR CHOICE BASED CREDIT SYSTEM

B.Sc Honours in Zoology (Six Semester Course) IVth SEMETER

CZOOL -8 Genetics

 $\boldsymbol{CZOOL}\textbf{ -9 Evolutions and Animal Behavior}$

CZOOL -10 Biochemistry

Credit -5(T) + 1(P)

Credit -5(T) + 1(P)

Credit -5(T) + 1(P)

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Semester IV

CZOOL -8: Genetics

Full Marks = 70 Total Teaching hrs: 75

Unit 1: Mendelian Genetics and its Extension

- 1.1 Principles of inheritance, Incomplete dominance and co-dominance.
- 1.2 Multiple alleles, lethal alleles, Epistasis, Pleiotropy.
- 1.3 Sex-linked, sex-influenced and sex-limited characters' inheritance.

Unit 2: Linkage, Crossing Over and Chromosomal Mapping

- 2.1 Linkage and crossing over, Cytological basis of crossing over,
- 2.2 Molecular mechanisms of crossing over including models of recombination, Recombination frequency as a measure of linkage intensity

Unit 3: Mutations

- 3.1 Types of gene mutations (classification),
- 3.2 Chromosomal aberrations (classification, figures and with one suitable examples of each);
- 3.3 genetic disorders (Down syndrome, Turners syndrome, Klinefelter syndrom Cri-du-chat, leukemia).

Unit 4: Sex Determination

4.1 Chromosomal mechanisms of sex determination in Drosophila and Man.

Unit 5: Extra-chromosomal Inheritance

Criteria for extra-chromosomal inheritance, Antibiotic resistance in Chlamydomonas, Mitochondrial mutations in Saccharomyces, Infective heredity in Paramecium and Maternal effects.

Unit 6: Recombination in Bacteria and Viruses

Conjugation, Transformation, Transduction, Complementation test in Bacteriophage.



CZOOL: 9: Evolution and Animal Behaviour

Teaching Hrs.60

UNIT-1 History of diversified life

- 1.1. Geological Time Scale And Geological Era
- 1.2. Zoogeographical regions (Oriental, Australian and Ethiopian Regions/Realms)

UNIT -2 Introductions to evolutionary Theories

- 2.1 Lamarkism
- 2.2 Darwinism
- 2.3 Neo Darwinism

UNIT-3. Source of heredity variation and evolution

- 3.1.Isolation
- 3.2. Natural Selection, types
- 3.3.Speciation
- 3.4. Evolution of Man and Horse

UNIT-4 .Hardy Weinberg law of Equilibrium

- 4.1. Genetic Drift
- 4.2. Founder effect

UNIT-5. Concepts and pattern of Behaviors

- 5.1 Innate Behaviors
- 5.2 learned behavior

UNIT-6. Social organization in insects: -

- 6.1. Honey Bee dance,
- 6.2 Different insect societies.

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CZOOL -10:- Biochemistry

Credit 4(T) + 2(P)

Teaching Hrs.60(T)+30(P)

Unit 1: Carbohydrates

Structure and biological importance; monosaccharides, disaccharides, polysaccharides and glycoconjugates.

Unit 2: Lipids

Structure and significance; physiologically important saturated and unsaturated fatty acids; triacylglycerols, phospholipids, glycolipids and steroids.

Unit 3: Proteins

Amino acids: Structure, classification and general properties of camino acids; physiological importance of essential and non-essential amino acids; Urea cycle.

Proteins: Bonds stabilizing protein structure; levels of organization in proteins; Denaturation; Introduction to simple and conjugate proteins.

Immunoglobulins: Basic structure, classes and function,

Unit 4: Nucleic Acids

Structure: Purines and pyrimidines, nucleosides, Nucleotides, Nucleic acids; Base pairing, denaturation and Renaturation of DNA. Types of DNA and RNA.

Unit 5: Enzymes

Nomenclature and classification; Introduction; cofactors; Specificity of enzyme action; Mechanism of action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Enzymes inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme action; coenzymes and isoenzymes.

UNIT-6. Metabolic path way

6.1 Glycolysis

6.2 Krebs's cycle

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Practical based on CZOOL-8, CZOOL-9 & CZOOL-10

CZOOL-8 Genetics Credit - 2
CZOOL-9 Evolution Credit - 2
CZOOL-10 Biochemistry Credit - 2

Genetics(20 marks)

- Simulation of principles of segregation and independent assortment using coloured beads.
 Application of law of probability and chi-square test.
- 2. Study of pattern of inheritance in human population of the traits Rolling of tongue and interlocking, and of the sex-influenced trait long vs short second finger in relation to the Fourth finger (apply Hardy-Weinberg law).
- 3. Study of mutants in *Drosophila* (Bar eye, white eye, yellow body, sepia eye, curled wing, Dumpy wing, vestigial wing and sepia eye-curled wing and curled wing-ebony body-sepia Eye.
- 4. Genotype analysis in the pedigree chart of the Victorian family affected with haemophilia

Evolution (20 marks)

- Genotypic analysis of blood groups in human population to estimate allele frequencies by Hardy -Weinberg equation
- 2. Fossils One representative fossil each from Foraminifera, Brachiopoda, Trilobita, Archeopterex, Ammonites, Echinodermata. Living fossils (Limulus, Peripatus, Sphenodon)
- 3. Evolution of Horse through models
- 4. Study of Serial homology exhibited by teeth and appendages
- 5. Study of Homologous and Analogous organ.

Animal Behaviour (20 marks)

- 1. Study of geo-taxis, photo-taxis, hydro-taxis in animals.
- 2. Locomotory behaviours of dipterans larvae(Housefly/blowfly/fruitfly)

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- 4. Locomotion on different types of substrata (writing paper, plastic sheet and sand paper
- 5. Study of bee hive and mound of termites.

Bio- Chemistry (10 marks)

- 1. Benedict's test for sugar.
- 2. Millon's test for Protein.
- 3. Quantitative test of functional groups in carbohydrates, proteins and lipids.
- 4. Paper chromatography of amino acids.
- 5. Action of salivary amylase under optimum conditions.
- 6. Effect of pH, temperature and inhibitors on the action of salivary amylase.
- 7. Demonstration of proteins separation by SDS-PAGE.

Seasonal and project Work (10 marks)

Viva -voce (10 marks)



<u>Recommended Books</u>

Genetics

- 1. Brooker: Genetics: Analysis and Principles (1999, Addison-Wesley,)
- 2. Gardner et al: Principles of Genetics (1991, John Wiley)
- 3. Griffith et al: An Introduction to Genetic Analysis (2005, Freeman)
- 4. Hartl & Jones: Essential Genetics: A Genomic Perspective (2002, Jones & Bartlet)
- 5. Russell: Genetics (2002, Benjamin Cummings)
- 6. Snustad & Simmons: Principles of Genetics (2006, John Wiley)
- 7. Lewin: Genes IX (2008, Jones & Bartlett)

Evolution

- 1. Moody: Introduction to Evolution (1978, Kalyani).
- 2. Savage: Evolution (1963, Holt, Reinhart and Winston)
- 3. Rastogi: Organic Evolution (1988, Kedarnath & Ramnath)
- 4. Strickberger: Evolution (2004, Jones & Bartlett)

Animal Behaviour

- Drickamer & Vessey: Animal Behaviour concepts, processes and methods (2nd ed. 1986, Wadsworth,)
- 2. Freeland: Problems in Practical Advanced Level Biology (1985, Hodder & Stoughton,)
- 3. Goodenough et al.: Perspectives on Animal Behaviour (1993, Wiley)
- 4. Grier: Biology of Animal Behaviour (1984, Mosby)
- 5. Lorenz: The Foundation of Ethology (1981, Springer)
- 6. Manning & Dawkins: An Introduction to Animal Behaviour (5th ed. 1998, Cambridge).
- 7. Mcfarland: Animal Behaviour, Psychology, Ethology and Evolution (1985, Pitman).
- 8. Slater: An Introduction to Ethology (1985, Cambridge).

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Bio-Chemistry

- 1. Cox, M.M and Nelson, D.L. (2008). *Lehninger Principles of Biochemistry*, V Edition, W.H. Freeman and Co., New York.
- 2. Berg, J.M., Tymoczko, J.L. and Stryer, L. (2007). *Biochemistry*, VI Edition, W.H.Freeman and Co., New York.
- 3. Murray, R.K., Bender, D.A., Botham, K.M., Kennelly, P.J., Rodwell, V.W. and Well, P.A. (2009,). *Harper's Illustrated Biochemistry*, XXVIII Edition, International Edition, The McGraw-Hill Companies Inc.
- 4. Hames, B.D. and Hooper, N.M. (2000). *Instant Notes in Biochemistry*, II Edition, BIOS Scientific Publishers Ltd., U.K.





PROPOSED SYLLABUS FOR CHOICE BASED CREDIT SYSTEM

B.Sc. Honours in Zoology (Six Semester Course) Vth SEMETER

CZOOL-11 Microbiology & Immunology
CZOOL-12 Environmental biology
Credits 4 (T) +2 (P)
CZOOL-12 Environmental biology
Credits 4 (T) +2 (P)
Credits 4 (T) +2 (P)
DSE-1 Economic Zoology
Credits 4 (T) +2 (P)
Credits 4 (T) +2 (P)



B.Sc. Zoology Honours.

Semester V

CZOOL-11 Microbiology & Immunology

Credit 4 (T) +2 (P)

Teaching Hours 60 (T)+30(P)

Microbiology

UNIT-1. Microbial diversity

- 2.1 Viruses
- 2.2. Bacteria
- 2.3. Eukaryotic microorganisms

UNIT-2. Techniques in microbiology

2.1. Classification of bacteria based on staining of microbes

UNIT-3. Pathogenic microbes

- 3.1 Mycobacterium
- 3.2 HIV
- 3.3 COVID -19

UNIT-4. Applied microbiology

- 4.1 Vaccine and its preparation
- 4.2 Antibiotic and sensitivity



Immunology

UNIT-1. Introduction to Immunity

UNIT-2. Cell and organs of immune system

- 2.1 Types of immune cells, lymphoid and myeloid
- 2.2 Primary and secondary lymphoid organs.

UNIT-3. Humoral immunity

- 3.1 Antigen
- 3.2 Function of B cell
- 3.3 Antigen Antibody reactions

UNIT- 4. Cell mediated immunity

4.1.Function of T-Cells

UNIT-5. Immunoglobulin

5.1 Structure and Function of different classes of Immunoglobulin

UNIT-6. Cytokines

Properties and functions of cytokines, Therapeutics Cytokines.

UNIT-7. Vaccines

Types of vaccines: Recombinant vaccines and DNA vaccines



CZOOL-12 Environmental Biology

UNIT- 1. General concepts

- 1.1 Introduction to environmental biology
- 1.2 Components of ecosystem
- 1.3 Major ecosystems in world
- 1.4 Energy flow in ecosystem
- 1.5 Food chain and food web
- 1.6 Bio- Geochemical cycle(C, N, and P)
 - 1.6.1 Water Cycle
 - 1.6.2 Gaseous Cycles- Carbon and Nitrogen
 - 1.6.3 Sedimentary Cycle- Phosphorous and sulphur

UNIT- 2. Population and communities

- 2.1 Population characteristics density, natality, mortality age pyramid and growth curve
- 2.2. Ecological succession and concept of climax

UNIT- 3. Pollution

- 3.1 Sources and impact of environmental pollutants- air, water and soil- Pollution Control
- 3.2 Global environmental changes- greenhouse gases and their effects
- 3.3 Acid Rains
- 3.4 Ozone Layer Depletion/destruction

UNIT- 4. Natural resources

- 4.1. Soil, water, mineral resources and their conservation
- 4.2. Biodiversity- benefits, hotspots, threats and conservation



Practical based on CZOOL-11 & CZOOL-12

CZOOL-11 Microbiology & Immunology Credit - 2

CZOOL-12 Environmental Biology Credit - 2

Microbiology (10 marks)

- 1. Preparation of liquid culture media of Bacteria.
- 2. Determination of microbial quality of milk.
- 3. Determination of microbial growth (spectrophotometric/colorimetric).
- 4. Study of microbiological laboratory safety and basic requirements.
- 5. Submission of report according to the syllabus.
- 6. Practical record and Viva-Voce.

Immunology (10 marks)

- 1. Determination of lymphoid organs.
- 2. Histological study of spleen, thymus and lymph nodes through slides/photographs.
- 3. Preparation of stained film to study various types of blood cells.
- 4. Demonstration of
 - a) ELISA
 - b) Immuno-electrophoresis
- 5. Submission of report according to the syllabus.
- 6. Practical record and Viva-Voce.

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PRACTICAL BASED ON CZOO-12

ENVIRONMENTAL BIOLOGY (20 marks)

- 1. Determination of population density in a natural/hypothetical community by Quadrate method and calculation of Shannon-Weiner diversity Index for some community.
- 2. Study of aquatic ecosystem-(Temperature, turbidity, Determination of PH, phytoplankton and zooplankton).
- 3. Qualitative study of plankton in given water sample.
- 4. Study of Biological Water Quality Assessment (BWQA).
- 5. Quantitative study of plankton in given water sample.(total count and differential count)

Submission on report on a visit of National Park/Zoological park/Biodiversity park/Wildlife sanctuary. (10 marks)

Practical record and viva voce. (10 marks)

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<u>Recommended Books</u>

Environmental Biology

- 1. Cunningham and Cunningham: Environmental Science (2003, McGraw Hill)
- 2. Odum: Fundamental of Ecology (1971, Saunders)
- 3. Raven, Berg and Jhonson: Environment (1993, Saunders)
- 4. Ricklefs: Ecology (1990, Freeman)
- 5. Sharma: Ecology and Environment (2003, Rastogi)
- 6. Turk and Turk: Environmental Science (1998, Saunders)



DSE-1 :- Economic Zoology

Credit-4(T) + 2(P)

Teaching Hrs -60 (T)

Unit 1: Bee-keeping and Bee Economy (Apiculture)

- 1.1 social behaviors of insects.
- 1.2 genetic basis of social behavior
- 1.3 Other beneficial products from bee.
- 1.4 Diseases of honey bee,

Unit 2: Silk and Silk Production (Sericulture)

- 2.1 Different types of silk and silkworms in India;
- 2.2 life cycle of Bombax mori.
- 2.3 silk worm rearing technology
- 2.4 pathogens of silk worm diseases

Unit 3: Aquaculture

- 3.1 objective of fish culture: Qualities of cultivable species of fishes
- 3.2 Types of cultivable fishes, qualities of Major carps, breeding habits of cultivable fishes with special reference of major carps
- 3.3 fish culture programming.
- 3.4 factors in fish culture: physical factors, chemical factors and biological factors.
- 3.5 Induced breeding by hypophysation.
- 3.6 fishing methods in India. (fishing crafts and gears)



<u>Recommended Books</u>

- 1. Prost, P. J. (1962). Apiculture. Oxford and IBH, New Delhi.
- 2. Sericulture, FAO Manual of Sericulture.
- 3. Hafez, E. S. E. (1962). Reproduction in Farm Animals, Lea and Fabiger Publishers.
- 4. Srivastava, C. B. L. (1999). *Fishery Science and Indian Fisheries*. Kitab Mahal publications, India.
- 5. Sardar Singh, *Beekeeping in India*, Indian council of Agricultural Research, New Delhi.45
- 6. Dhyan Singh Bisht, Apiculture, ICAR Publication.
- 7. Knobil, E. and Neill, J. D. (2006). *The Physiology of Reproduction*, Vol. 2, Elsevier Publishers.
- 8. Dunham R. A. (2004). *Aquaculture and Fisheries Biotechnology Genetic Approaches*. CABI publications, U.K.





DSE-2:-Biostatistics

Credit-4(T) +2(P)

Teaching Hrs -60 (T)

UNIT-1 Data

- 1.1 Primary Data
- 1.2 Secondary data
- 1.3 Frequency distribution and tally marks

UNIT-2. Data presentation

- 2.1 Diagrammatic: Histogram and Pie Diagram
- 2.2 Graphical

UNIT-3. Measurement of central tendency

- 3.1. **Mean**
- 3.2 Median
- 3.3 Mode

UNIT-4. Measurment of Variation

- 4.1 Standard deviation
- 4.2 Standard error

UNIT-5. Test of Significance

5.1 Student 't' test



PRACTICAL BASED ON DSE: 1 & DSE: 2

- 1. Estimation of Do₂ or Dco₂ of pond Water. (20 marks)
- 2. Determination of Mean Median or Mode of given data sample. (10 marks)
- 3. Spotting (2x5 = 10)

Common carp, honey bee, Termites, silk worm, paddy pests sugar cane pests, fishing gears etc.

- 4. Field Report: Report on field Visit to sight of sericulture, Apiculture, Lac Culture and Aquaculture (10)
 - 5. Practical record (5 marks)
 - 6. Viva -voce (5 marks).

DSE-1: - Economic Zoology

- 1. Report on field Visit to sight of sericulture, Apiculture, Lac Culture and Aquaculture
- 2. Study of Paddy pests, Pest of Sugar cane
- 3. Study of some economically Important fishes

DSE-2:-Biostatistics

- 1. Determination of mean, median & mode
- 2. Determination of Deviation
- 3. Graphical representation of statistical data

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PROPOSED SYLLABUS FOR CHOICE BASED CREDIT SYSTEM B.Sc Honours in Zoology

(Six Semester Course)
VIth SEMETER

CZOOL-13 Molecular Biology & Biotechnology

CZOOL-14 Medical and Applied Zoology

DSE-3 Toxicology

DSE-4 Project

Credits 4 (T) +2 (P)

Credits 4 (T) +2 (P)

Credits 4 (T) +2 (P)

Credits 4 (T) +2 (P)



Semester VI

CZOOL-13 Molecular Biology & Biotechnology

Credidt 4(T) + 2(P)

Teaching Hours 60 (T)+30(P)

UNIT-1. Nucleic Acids

- 1.1 Conformations of DNA(A, B and Z)
- 1.2 Mechanism of DNA replication
- 1.3 Mechanism of transcription in Prokaryotes
- 1.4 Mechanism of translation in prokaryotes

UNIT 2. Gene Regulation

- 2.1 Concepts of operon
- 2.3 Iac operon,
- 2.4 trp operon,

UNIT-3. Biotechnology

- 3.1. Tools: Restriction enzymes, Vectors
- 3.2. DNA fingerprinting
- 3.3. Concept and scope of Bio-technology
- 3.4. Animal cell culture (Basic Techniques)



CZOOL-14 Medical and Applied Zoology

Credidt 4 (T) +2 (P)

Teaching Hours 60 (T)+30(P)

UNIT-1 Life Cycle, Pathogenicity, clinical features, prophylaxis and control of pathogenic protozoan

- 1.1 Plasmodium
- 1.2 Entamoeba histolytica
- 1.3 Leishmania donovani

UNIT-2 Pathogenic Helminthes parasites, clinical Features, Control and prophylaxis

- 2.1 Fasciola sp.
- 2.2. Wuchereria sp.
- 2.3. Ascaries sp.

UNIT-3 Vector Biology

- 3.1 Mosquito (Anopheles Female), Yellow Fever ,Dengue Fever,(Aedes)Filariasis (Culex Female) Japanese encephalitis
- 3.2 Plague

UNIT-4 Non Vector Diseases

- 4.1 Typhoid
- 4.2 Cholera
- 4.3 Small pox

UNIT-5 General Account of Vaccine & Vaccination, Eradication Programme, drug Therapy.
UNIT-6 COVID-19 (CORONA VIRUS)

6.1 Symptops, Epidemiology, Prevention and treatment.

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Practical based on CZOOL-13 & CZOOL-14

Credit: 4 Practical hrs: 60

Molecular Biology & Biotechnology

- 1. Demonstration of DNA separation on Gel
- 2. Use of micropipette
- 3. Protein estimation by Colorimeter
- 4. Test of bio molecules: Carbohydrate, Protein and lipids
- 1. Physical examination of urine
- 2. Blood film preparation
- 3. Determination of Bleeding and clotting time
- 4. Glucose presence in Urine and serum
- 5. Slide / museum specimens of parasites
- 6. Study of specimens of common pests



<u>Recommended Books</u>

Molecular Biology & Biotechnology

1. B.D.Singh - A Text book of biotechnology

- 2.. Alberts et al: Molecular Biology of the Cell (2008, Garland)
- 3. Karp: Cell and Molecular Biology (2008, John Wiley)
- 4. Lodish et al: Molecular Cell Biology (2008, Freeman)

Immunology

- 1. Abbas et al: Cellular and Molecular Immunology (2001, Saunders)
- 2. Alberts et al: Molecular Biology of the Cell (5th ed. 2008, Garland)
- 3. Kuby: Immunology (2003, Freeman)
- 4. Roitt and Delvis: Roitt's Essential Immunology (6th ed. 2006, Blackwell)

Microbiology

- 1. Madigan and Martinko: Brock Biology of Microorganisms (2006, Prentice Hall)
- 2. Prescott, Harley and Klein: Microbiology (1999, McGraw)
- 3. Pelzar Microbilogy
- 4. Tortora et.al, Pearson 2011, 9th Edition



DSE-3:- Toxicology

(CREDITS: THEORY-4, PRACTICALS-2)

THEORY Teaching Hrs: 60

UNIT: 1 Environmental Pollution:-

Air, water, soil and their control Strategies.

UNIT:- 2. Environmental toxicology:-

Introduction, definition, classification, toxic agent (food additives, pesticides, metals, carcinogens and poisons), xenobiotics.

UNIT :- 3. Statistical method in toxicology , applications of toxicology (assessment of Lc 50, LD 50)

UNIT:-4.

- 4.1. Environmental Impact assessment.
- 4.2. Environmental Policy.

UNIT:- 5. Animal Poisoning

5.1 Introduction, Honeybee, Scorpion and Snake poisoning



PRACTICAL BASED ON DSE:- 3

Credit: - 4 Practical hrs 30

DSE-3 PRACTICALS

- 1. To study the behavioural response of a fish under different dose of DDT in laboratory condition.
- 2. To determine LC50 of a toxicant like Cr, Cd, Mn and Ar for Clarius batrachus /Labco rohita under laboratory condition
- 3. Project report on food additives, pesticides, metals carcinogens and poisons.
- 4. Practical record /viva voce.



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DSE-4: - Project work

Credit-4

Teaching Hrs -60

The objective of this paper is to inculcate the trait of independent investigation, the student shall work (approximately 60 study hours) on some topic related to his / her area of specialization or related to his / her broader area of study. He / she shall write a project report preferably independently or in association with faculty members of the Department.

Two examiners shall evaluate the project. A written test onehour duration relating to the project shall be taken.

MARKS DISTRIBUTION

a) Project Preparation through Power Point	40
b) Written Test	40
c) Viva - Voce	20





Instruction

The project report should contain all necessary data and at the same time it should be brief and to the points.

A project report /dissertation include usually following chapters-

- 1. Introduction / Theoretical background.
- 2. Review of related literature.
- 3. Methodology (materials and methods)
- 4. Data collection
- 5. Analysis of data
- 6. Discussion of results and findings of study.
- 7. Bibliography.
- 8. Appendix

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KOLHAN UNIVERSITY – CHAIBASA JHARKHAND



UNDER GRADUATE PROGRAMME CHOICE BASED CREDIT SYSTEM (CBCS)

(Session 2017- 2020)

SYLLABUS

(According Re- Revised Regulation of CBCS)

B. Sc. BOTANY HONOURS



B. Sc. BOTANY Honours (Semester I)

Course	Name of Paper	No. of	Full	End Semester Exam	
		credits	Marks	Full Marks	Pass Marks
CC- 1 Theory	Microbiology, Fungi, Plant Pathology	4	70	70	28
CC - 2 Theory	Algae & Bryophytes	4	70	70	28
CC (P) - 1 Practical	Practical based on CC 1 & CC 2	4	60	60	24
GE – 1 Theory	Biodiversity (Microbiology, Algae, Fungi & Archegoniate	4	70	70	28
GE (P) – 1 Practical	Practical based on GE (P) - 1	2	30	30	12
AECC1 Compulsory	MIL Communication	2	50	50	20
	Total Credits	20	350	350	

B. Sc. BOTANY Honours (Semester II)

Course	Name of Paper	No. of	Full	End Semester Exam	
		credits	Marks	Full Marks	Pass Marks
CC - 3 Theory	Pteridophyte & Gymnosperm	4	70	70	28
CC - 4 Theory	Taxonomy	4	70	70	28
CC (P) - 2 Practical	Practical based on CC – 3 & CC - 4	4	60	60	24
G E - 2	Angiosperm & Plant Ecology	4	70	70	28
GE (P) - 2	Practical based on GE (P) - 1	2	30	30	12
AECC2 Compulsory	Environmental Science	2	50	50	20
	Total Credits	20	350	350	

CC Core Course (Botany)

GE General Elective

AECC Ability Enhancement Compulsory Course



B. Sc. BOTANY Honours (Semester III)

Course	Name of Paper	No. of	Full Marks	End Semester Exam	
		credits		Full Marks	Pass Marks
CC5 Theory	Anatomy & Embryology	4	70	70	28
CC6 Theory	Economic Botany & Ethnobotany	4	70	70	28
CC7 Theory	Plant Physiology	4	70	70	28
CC (P) - 3 Practical	Practical based on CC- 5, CC -6, CC -7	6	90	50	20
Generic Elective -3	Anatomy, Embryology Economic Botany	4	70	70	28
GE (P) - 3	Practical based GE - 3	2	30	30	12
SEC 1	Current Affairs	2	50	50	20
	Total Credits	26	450	450	

B. Sc. BOTANY Honours (Semester IV)

Course	Name of Paper	No. of	Full Marks	End Semester Exam	
		credits		Full Marks	Pass Marks
CC8 Theory	Plant Metabolism	4	70	70	28
CC9 Theory	Plant Biochemistry	4	70	70	28
CC10 Theory	Plant Biotechnology	4	70	70	28
CC10 Practical	Practical based on CC 8, CC 9 & CC 10	6	90	90	36
Generic Elective - 4	Plant physiology, Biochemistry & Biotechnology	4	70	70	28
GE (P) - 4	Practical based GE - 4	2	30	30	12
SEC2	Personality Development	2	50	50	20
	Total Credits	26	450	450	

CC Core Course (Botany)

GE General Elective

SEC Skill Enhancement Course



B. Sc. BOTANY Honours (Semester V)

Course	Name of Paper	No. of	Full Marks	End Semester Exam	
		credits		Full Marks	Pass Marks
CC11Theory	Cytogenetics & Plant Breeding	4	70	70	28
CC12 Theory	Cell &Molecular Biology	4	70	70	28
CC (P) - 5	Practical based on CC12	4	60	60	24
DSE - 1 Theory	Cell & Molecular Biology	4	70	70	28
DSE - 2 Theory	Economic Botany & Biotechnology	4	70	70	28
DSE (P) - 1	Practical based on DSE – I & 2	4	60	60	24
	<u>Total Credits</u>	24	400	400	

B. Sc. BOTANY Honours (Semester VI)

Course	Name of Paper	No. of	Full Marks	End Semester Exam	
		credits		Full Marks	Pass Marks
CC13 Theory	Ecology	4	70	70	28
CC14 Theory	Environmental Biology	4	70	70	28
CC (P) - 6	Practical based on CC14	4	60	60	24
DSE - 3 Theory	Genetics & Plant Breeding	4	70	70	28
DSE (P) - 2 Practical	Practical based on DSE-3	2	30	30	12
DSE - 4	Project	6	100	100	40
	<u>Total Credits</u>	24	400	400	

CC Core Course (Botany) **DSE** Discipline Specific Elective



PART I



SEMESTER I

Core Course 1: Botany Paper I (Microbes, Fungi & Plant Pathology)

Full Marks: 70 Credits: 4 Time: 03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

MICROBIOLOGY

- 1. Classification of Kingdoms and their criteria (Whittaker 1969)
- 2. Virus- Discovery, General structure, replication, DNA virus (T-phage); Lytic and lysogenic Cycle, RNA virus and (TMV); Economic importance
- 3. Bacteria Discovery, Modern concept about bacterial cell structure; Reproduction-Vegetative, asexual and recombination (conjugation, transformation and Transduction); Economic importance
- 4. Role of microbes in nitrogen fixation; organic matter decomposition
- 5. Industrial importance of micro organisms
- 6. General account of Mycoplasma and diseases caused by them.

FUNGI

- 1. Introduction General characters, ecology and significance, range of thallus organization, cell wall composition, nutrition, reproduction and Classification;
- 2. True fungi General characteristic, ecology and significance; Life cycle of *Rhizopus*, *Peziza*, *Puccinia* & *Cercospora*
- 3. Economic Importance of fungi
- 4. General account of Lichens, classification & economic importance

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5. General account, reproduction and significance; Mycorrhiza: ectomycorrhiza & Endomycorrhiza and their significance

PLANT PATHOLOGY

- 1. Important Plant diseases of Jharkhand; Etiology, symptoms and control of the following diseases:
 - I. Late blight of potato
 - II. Loose smut of wheat
 - III. Rust of linseed
 - IV. Red rot of sugar cane
 - V. Wilt of tomato
 - VI. Citrus canker (*Xanthomonas camperstris* pv. *citri*)
 - VII. Bacterial blight of paddy (*Xanthomonas campestris* pv. oryzae)
 - VIII. Tundu disease of wheat
 - IX. Little leaf of brinjal
 - X. Tobacco mosaic virus
- 2. Pathogen attack and defense mechanisms: physical, physiological, biochemical and molecular aspects
- 3. Plant disease management: chemical, biological, development of transgenics, biopesticides



Core Course 2: Botany Paper II (Theory) (Algae and Bryophytes)

Full Marks: 70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

ALGAE

- 1. General characteristics; Ecology & distribution; Classification of Algae:
- 2. Range of Thallus organization and Reproduction
- 3. Structure, Life history, and affinities of the following general

 Nostoc, Volvox, Oedogonium, Chara, Vaucheria, Polysiphonia and

 Batrachospermum
- 4. Economic Importance of Algae

BRYOPHYTES

- 1. General Characteristics, adaptation to land habit, Classification,
- 2. Structure, life history & affinities of the genera mentioned below *Marchantia, Anthoceros, Sphagum & Funaria*
- 3. Sterilization of sporagenous tissues in Bryophytes
- 4. Vegetative reproduction in Bryophytes
- 5. Economic importance of bryophytes with mention of Sphagnum –



(5)

Botany Practical (Semester – I) (Based on CC1 & CC2) CC (P) - 1

Full Marks: 60 Credits: 4 Time: 6 Hrs

1. Gram staining of bacteria

2. Study the symptom and identify two Plant disease (Alternate material to be provided) (10)

- 3. Morphological and structural details of the forms belonging to Algae, Fungi & Bryophytes by preparing temporary stained microscopic slide preparation & studies (3x15=45)
- 4. Comment upon the Spots (1-5): 2x5 = 10
- 5. Field Study Report: 10
- 6. Viva Voce: 10
- 7. Class record, Herbarium, Chart, Model etc: 10

Suggested Readings

- 1. Kumar, H.D. (1999). Introductory Phycology. Affiliated East-West. Press Pvt. Ltd. Delhi. 2nd edition.
- 2. Tortora, G.J., Funke, B.R., Case, C.L. (2010). Microbiology: An Introduction, Pearson Benjamin Cummings, U.S.A. 10th edition.
- 3. Sethi, I.K. and Walia, S.K. (2011). Text book of Fungi & Their Allies, MacMillan Publishers Pvt. Ltd., Delhi.
- 4. Alexopoulos, C.J., Mims, C.W., Blackwell, M. (1996). Introductory Mycology, John Wiley and Sons (Asia), Singapore. 4th edition.
- 5. Raven, P.H., Johnson, G.B., Losos, J.B., Singer, S.R., (2005). Biology. Tata McGraw Hill, Delhi, India.
- 6. Parihar, N.S. (1991). An introduction to Embryophyta Kumar, H.D. (1999). Introductory Phycology. Affiliated East-West. Press Pvt. Ltd. Delhi. 2nd edition.



SEMESTER II

Core Course 3: Botany Paper III (Theory) (Pteridophytes and Gymnosperm)

Full Marks: 70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

PTERIDOPHYTES

- 1. General Characteristics & classification of Pteridophytes
- 2. Morphology, anatomy and reproduction of following genera: *Lycopodium, Selaginella, Equisetum, Pteris*
- 3. Heterospory and seed habit,
- 4. Steler evolution
- 5. Ecological & economic importance of Pteridophytes
- 6. Fossil Pteridophytes *Rhynia & Calamites*

GYMNOSPERM

Morphology, anatomy and reproduction of following genera:

Pinus, Taxus, Ginkgo & Gnetum

- 1. Paleobotany:
 - a. A brief idea about geological area
 - b. Definition of Fossil, process and conditions
 - c. Detailed study of Lyginopetris and Cycadeoidea
 - d. A brief idea about the Plant Fossils of Rajmahal area

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Core Course 4: Botany Paper IV (Theory) (Taxonomy)

Full Marks: 70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

TAXONOMY

- 1. Classification of plants as proposed by Benthem & Hooker and Hutchinson
- 2. Idea about important rules of plant nomenclature with special reference to ICBN
- Diagnostic features and economic importance of following families:
 Ranunculaceae, Asclepiadaceae, Apocynaceae, Catharanthaceae, Euphorbiaceae,
 Liliaceae, Orchidaceae, Cyperaceae & Poaceae
- 4. Brief Knowledge of Numerical Taxonomy, Categories and taxonomic group
- Modern trends in plant taxonomy Taxonomy in relation to Anatomy,
 Embryology, Palynology & Cytology



Botany Practical (Semester – II) (Based on CC3 & CC4) CC (P) - 2

Full Marks: 60 Credits: 4 Time: 6 Hrs

- 1. Morphological and structural details of the forms belonging Peridophytes & Gymnosperm by temporary stained microscopic slide preparation & studies (2x10=20)
- 2. Description & Identification of the family of the given Angiospermic material in semitechnical words (Floral characters, V. S. of flower, section of ovary, Floral Diagram and floral formula and systematic position according to Bentham & Hooker's system of classification) (25)
- 3. Identification of medicinal / economically important plant and its uses. (3x5 = 15)
- 4. Comment upon the Spots (1-5): 2x5 = 10
- 5. Field Study Report: 10
- 6. Viva Voce: 10
- 7. Class record, Herbarium, Chart, Model etc: 10

Suggested Readings

- 1. Simpson, M.G. (2006). *Plant Systematics*. Elsevier Academic Press, San Diego, CA, U.S.A.
- 2. Singh, G. (2012). *Plant Systematics:* Theory and Practice. Oxford & IBH Pvt. Ltd., New Delhi. 3rd edition.
- 3. Bhatnagar, S.P. and Moitra, A. (1996). Gymnosperms. New Age International (P) Ltd Publishers, New Delhi, India.
- 4. Parihar, N.S. (1991). An introduction to Embryophyta. Vol. I. Bryophyta. Central Book Depot, Allahabad.



PART II



SEMESTER III

Core Course 5: Botany Paper V (Theory) (Anatomy and Embryology)

Full Marks: 70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

ANATOMY

- Meristem and permanent tissue
 Root and short meristem, simple and complex tissue
- 2. Mechanical Tissues Structure, distribution and function
- 3. Normal secondary growth and anomalous secondary growth: *Nyctanthus, Boerhavia,* & *Dracaena*
- 4. Organisation of tissue in relation to environment (Ecological anatomy)
- 5. Periderm origin, structure & function

EMBRYOLOGY

- 1. Microsporogenesis
- 2. Male Gametophyte
- 3. Macrosporogenesis
- 4. Feamale Gametophyte (Types of Embryo sacs)
- 5. Fertilization
- 6. Endosperm Types, structure & function
- 7. Embryo development Dicot & monocot
- 8. Apomixis & Polyembryony Definition, types and applications

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Core Course 6: Botany Paper VI (Theory) (Economic Botany & Ethnobotany)

Full Marks:70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

ECONOMIC BOTANY

- 1. Concept of origin & their importance with reference to Vavilov's work
- 2. Cereals origin, morphology & uses (rice, maize & wheat)
- 3. Legumes general account with special reference to gram and Soyabean.
- 4. Beverages tea (morphology, processing & uses)
- 5. Oil & fats general description with special reference to ground salt.
- 6. Fiber yielding plant general description with special reference to cotton (botanical name, family, part of uses, morphology & uses)
- 7. Spices general description with special reference to clove & black pepper (botanical name, family, part of uses, morphology & uses)

ETHNOBOTANY

- 1. Medico-ethnobotanical sources in India:
- 2. Significance of the following plants in ethno botanical practices (along with their habitat and morphology) a) Azadiractha indica b) Ocimum sanctum c) Vitex negundo. d) Gloriosa superba e) Tribulus terrestris f) Pongamia pinnata g) Cassia auriculata h) Indigofera tinctoria.
- 3. Role of ethnobotany in modern medicine with special example *Rauvolfia sepentina*, *Trichopus zeylanicus*, *Artemisia*, *Withania*.
- 4. Role of ethnic groups in conservation of plant genetic resources. Endangered taxa and forest management (participatory forest management)



Core Course 7: Botany Paper VII (Theory) (Plant Physiology)

Full Marks:70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

PLANT PHYSIOLOGY

- 1. Plant-water relations: diffusion and osmosis,
- 2. Water potential and chemical potential,
- 3. Absorption or water,
- 4. Ascent of sap,
- 5. Transpiration,
- 6. Mechanism of stomatal movement
- 7. Mineral nutrition: nutrient uptake and transport mechanisms. role of carriers.
- 8. Transport of organic substances, path of translocation, mechanism of translocation



Botany Practical (Semester – III)

(Based on CC-5, CC- 6 & CC-7)

Full Marks: 90 Credits: 6 Time: 6 Hrs

- 1. Internal anatomy of primary and secondary tissues (Both normal and abnormal) of Angiospermic plant (20)
- 2. Dissection of embryo from a developing seed. (20)
- 3. Identification of medicinal / Ethnobotanically important plant and its uses. (10)
- 4. Perform Physiological experiment given to you by lot (30)
- 5. Comment upon the Spots (1-5): 2x5 = 20
- 6. Field Study Report: 15
- 7. Viva Voce: 15
- 8. Class record, Herbarium, Chart, Model etc: 20

Suggested Readings

- 1. Taiz, L., Zeiger, E., (2010). Plant Physiology. Sinauer Associates Inc., U.S.A. 5th Edition.
- 2. Hopkins, W.G Huner, N.P., (2009). Introduction to Plant Physiology. John Wiley & Sons, U.S.A. 4th Edition.
- 3. Bajracharya, D., (1999). Experiments in Plant Physiology- A Laboratory Manual. Narosa Publishing House, New Delhi.
- 4. Bhojwani, S.S. & Bhatnagar, S.P. (2011). Embryology of Angiosperms. Vikas Publication House Pvt. Ltd. New Delhi. 5th edition.
- 5. Mauseth, J.D. (1988). Plant Anatomy. The Benjamin/Cummings Publisher, USA.



SEMESTER IV

Core Course 8: Botany Paper VIII (Theory) (Plant Metabolism)

Full Marks: 70 Credits: 4 Time: 03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

PLANT METABOLISM

- 1. Photosynthesis; phtosynthetic apparatus, pigments, photochemical reactions, electron transport pathways in chloroplast membranes, photophosphorylation. Calvin Cycle,
- 2. Crassulacean Acid Metabolism,
- 3. Hatch & Slack pathway,
- 4. Photorespiration
- 5. Respiration: Glycolysis, TCA Cycle and it's regulation, electron transport in Mitochondria, oxidative phosphorylation,
- 6. Pentose Phosphate Pathway
- 7. Biological Nitrogen Fixation, Reduction Of N₂ Into NH₃
- 8. Phytohormones: General account, discovery, structure and mechanism of action, and roles of Auxins, Cytokinins, Gibberellins, Abscissic acid and Ethylene.
- 9. Physiology of flowering, photoperiodism, vernalization, role of pigments and hormones.
- 10. Physiology of tropic and nastic movements of plants.



Core Course 9: Botany Paper IX (Theory) (Plant Biochemistry)

Full Marks: 70 Credits: 4 Time: 03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

PLANT BIOCHEMISTRY

- Plant case organelles & their roles: Mitochondria, chloroplast, Peroxisomes,
 Glyoxysomes Ribosome & nucleus
- 2. Cell wall, cell membrane & their biochemical properties
- 3. Amino acids and peptides, types of amino acid structure of protein
- 4. Protein synthesis
- 5. Enzymes Nature, properties, types, classification, mechanism of action and factors enzyme activities



Core Course: Botany Paper X (Theory) (Plant Biotechnology)

Full Marks: 70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

BIOTECHNOLOGY

- 1. Basic aspect of plant tissue culture, micro-propagation of embryo culture, pollen culture, and their applications.
- 2. Tools and techniques of recombinant DNA technology and their application with special reference to agricultural science.
- 3. Protoplast culture & somatic hybridization
- 4. Blothing techniques: northern, southern & western blotting, DNA fingerprinting, Molecular DNA markers, PCR & reverse transcriptase, ELISA.
- 5. Morphogenesis, photomorphogenesis, phytochrome
- 6. Role of plant tissue culture in growth, development and differentiation, totipotency organogenesis, embryogensis
- 7. Protoplast culture and somatic hybridization
- 8. Micropropagation
- 9. Genetic engineering in plants and future of plant biotechnology



Botany Practical (Semester – IV)

(Based on CC8, CC9 & CC10)

Full Marks: 90 Credits: 6 Time: 6 Hrs

- 1. Perform Biochemical test for Carbohydrate, Proteins and lipids from Given material (20)
- 2. Separation of pigments by paper chromatography (30)
- 3. Perform Physiological experiment related Photosynthesis given to you by lot (30)
- 4. Comment upon the Spots (1-5): 2x5 = 20
- 5. Field Study Report: 15
- 6. Viva Voce: 15
- 7. Class record, Herbarium, Chart, Model etc: 20

Suggested Reading

- 1. Fundamentals of plant physiology, V.K. Jain, S. Chand & Co.
- 2. A Textbook of plant Physiology, Biochemistry and Biotechnology, S. K. Verma & Mohit Verma, S. Chand & Co.
- 3. Plant Physiology, Taiz & Zeiger, Sineur Associates.



PART III



SEMESTER V

Course: Botany Paper XI (Theory)
(Cytogenetics & Plant Breeding)

Full Marks: 70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

CYTOGENETICS & PLANT BREEDING

- 1. Cell division, it's regulation and significance: Mitosis and Meiosis
- 2. Morphology of Chromosomes including lampbrush chromosomes, B-chromosome and polytene chromosomes
- 3. Mendel's experiments and principles of inheritance: back cross and test cross; gene interactions and modified dihybrid ratio-complementary, supplementary, duplicate and epistatic factor
- 4. Quantitative genetics: quantitative traits and quantitative genetics; the multiple factor hypothesis; descriptive statistics.
- 5. Linkage and recombination: coupling and repulsion phases; two and three point test crosses with their significance in chromosome mapping; interference and coefficient of coincidence
- 6. Cytoplasmic inheritance shell coiling in snails, kappa particles in *Paramecium*, mitochondria in yeast and plastics in *Mirabilis jalapa*
- 7. Sex determination and sex-linked inheritance
- 8. Genetic code
- 9. Methods of plant breeding
- 10. Role of plant breeding in crop improvement

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Core Course 12: Botany Paper XII (Theory) (Cell and Molecular Biology)

Full Marks:70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

CELL & MOLECULAR BIOLOGY

- 1. Nucleic acids: compositions of nucleic acids and synthesis of nucleotides;
- 2. DNA structure; A, B, Z forms of DNA; denaturation and renaturation of DNA; Chromatin structure; DNA replication and recombination, DNA polymerases; different forms of RNA and their role
- 3. Gene structure, expression and regulation: gene organization in prokaryotes and eukaryotes; inducible, repressible, positive and negative gene regulation;
- 4. Interrupted genes in eukaryotes; RNA splicing; messenger RNA stability
- 5. Recombinant DNA technology: restriction endonucleases; prokaryotic and eukaryotic cloning vectors; genomic and cDNA libraries; Southern and northern analysis; various techniques of gene mapping and DNA fingerprinting (RFLP, RAPD, AFLP); chromosome walking; polymerase chain reaction; DNA Sequencing
- 6. Genetic Engineering: vectors for gene delivery; selectable markers and reporter genes; method of gene delivery;
- 7. Agrobacterium the natural genetic engineer; salient achievements in crop biotechnology (with suitable examples) and prospects.



Botany Practical (Semester – V) (Based on CC11 & CC12)

Full Marks: 60 Credits: 4 Time: 6 Hrs

- 1. Temporary slide of Mitosis or meiosis is to prepared and at least two stages to be shown (10)
- 2. Experiment on interaction of Gene & chi Square test (15)
- 3. Comment upon the Spots (1-5): 2x5 = 10
- 4. Field Study Report: 05
- 5. Viva Voce: 10
- 6. Class record, Herbarium, Chart, Model etc: 10

Suggested Readings

- Karp, G. 2010. Cell and Molecular Biology: Concepts and Experiments. 6th Edition. John Wiley & Sons. Inc.
- De Robertis, E.D.P. and De Robertis, E.M.F. 2006. Cell and Molecular Biology.
 8th edition. Lippincott Williams and Wilkins, Philadelphia.
- 3. Cooper, G.M. and Hausman, R.E. 2009. The Cell: A Molecular Approach. 5th edition. ASM Press & Sunderland, Washington, D.C.; Sinauer Associates, MA.
- 4. Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. 2009. The World of the Cell. 7th edition. Pearson Benjamin Cummings Publishing, San Francisco

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DSE₁

Cell and Molecular Biology

Full Marks: 70 Credits: 4 Time:03 Hours

In all nine question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

Techniques in Biology: Principles of microscopy; Light Microscopy; Phase contrast microscopy; Fluorescence microscopy; Confocal microscopy; Sample Preparation for light microscopy; Electron microscopy (EM)- Scanning EM and Scanning Transmission EM (STEM); Sample Preparation for electron microscopy; X-ray diffraction analysis.

Cell as a unit of Life: The Cell Theory; Prokaryotic and eukaryotic cells; Cell size and shape; Eukaryotic Cell components.

Cell Organelles: Mitochondria: Structure, marker enzymes, composition; Semiautonomous nature; Symbiont hypothesis; Proteins synthesized within mitochondria; mitochondrial DNA.

Chloroplast Structure, marker enzymes, composition; semiautonomous nature, chloroplast DNA.

ER, Golgi body & Lysosomes: Structures and roles.

Peroxisomes and Glyoxisomes:D Structures, composition, functions in animals and plants and biogenesis.

Nucleus: Nuclear Envelope- structure of nuclear pore complex; chromatin; molecular organization, DNA packaging in eukaryotes, euchromatin and heterochromatin, nucleolus and ribosome structure (brief).

Cell Membrane and Cell Wall: The functions of membranes; Models of membrane structure;

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The fluidity of membranes; Membrane proteins and their functions; Carbohydrates in the membrane; Faces of the membranes; Selective permeability of the membranes; Cell wall.

Cell Cycle: Overview of Cell cycle, Mitosis and Meiosis; Molecular controls.

Genetic material: DNA: Miescher to Watson and Crick- historic perspective, Griffith's and Avery's transformation experiments, Hershey-Chase bacteriophage experiment, DNA structure, types of DNA, types of genetic material.

DNA replication (Prokaryotes and eukaryotes): bidirectional replication, semi-conservative, semi discontinuous RNA priming, 0 (theta) mode of replication, replication of linear, ds- DNA, replicating the 5 end of linear chromosome including replication enzymes.

Transcription (**Prokaryotes and Eukaryotes**): Types of structures of RNA (mRNA, tRNA, rRNA), RNA polymerase- various types; Translation (Prokaryotes and eukaryotes), genetic code. **Regulation of gene expression:** Prokaryotes:Lac operon and Tryptophan operon; and in Eukaryotes.

Practical

- 1. To study prokaryotic cells (bacteria), viruses, eukaryotic cells with the help of light and electron micrographs.
- 2. Study of the photomicrographs of cell organelles
- 3. To study the structure of plant cell through temporary mounts.
- 4. To study the structure of animal cells by temporary mounts-squamous epithelial cell and nerve cell.
- 5. Preparation of temporary mounts of striated muscle fiber
- 6. To prepare temporary stained preparation of mitochondria from striated muscle cells /cheek epithelial cells using vital stain Janus green.
- 7. Study of mitosis and meiosis (temporary mounts and permanent slides).
- 8. Study the effect of temperature, organic solvent on semi permeable membrane.
- 9. Demonstration of dialysis of starch and simple sugar.

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- 10. Study of plasmolysis and deplasmolysis on *Rhoeo* leaf.
- 11. Measure the cell size (either length or breadth/diameter) by micrometry.
- 12. Study the structure of nuclear pore complex by photograph (from Gerald Karp)Study of special chromosomes (polytene & lampbrush) either by slides or photographs.
- 13. Study DNA packaging by micrographs.
- 14. Preparation of the karyotype and ideogram from given photograph of somatic metaphase chromosome.

Suggested Readings

- 1. Karp, G. 2010. Cell and Molecular Biology: Concepts and Experiments. 6th Edition. John Wiley & Sons. Inc.
- De Robertis, E.D.P. and De Robertis, E.M.F. 2006. Cell and Molecular Biology.
 8th edition. Lippincott Williams and Wilkins, Philadelphia.
- 3. Cooper, G.M. and Hausman, R.E. 2009. The Cell: A Molecular Approach. 5th edition. ASM Press & Sunderland, Washington, D.C.; Sinauer Associates, MA.
- 4. Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. 2009. The World of the Cell. 7th edition. Pearson Benjamin Cummings Publishing, San Francisco.

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE



DSE₂

Economic Botany and Biotechnology

Full Marks:70 Credits: 4 Time:03 Hours

In all nine question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

Origin of Cultivated Plants: Concept of centres of origin, their importance with reference to Vavilov's work

Cereals: Wheat -Origin, morphology, uses

Legumes: General account with special reference to Gram and soybean

Spices: General account with special reference to clove and black pepper (Botanical name, family, part used, morphology and uses)

Beverages: Tea (morphology, processing, uses)

Oils and Fats: General description with special reference to groundnut

Fibre Yielding Plants: General description with special reference to Cotton (Botanical name, family, part used, morphology and uses)

Introduction to biotechnology

Plant tissue culture: Micropropagation; haploid production through androgenesis and gynogenesis; brief account of embryo & endosperm culture with their applications

Recombinant DNA Techniques: Blotting techniques: Northern, Southern and Western Blotting,

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DNA Fingerprinting; Molecular DNA markers i.e. RAPD, RFLP, SNPs; DNA sequencing, PCR and Reverse Transcriptase-PCR. Hybridoma and monoclonal antibodies, ELISA and Immunodetection. Molecular diagnosis of human disease, Human gene Therapy.

Practical

- 1. Study of economically important plants: Wheat, Gram, Soybean, Black pepper, Clove Tea, Cotton, Groundnut through specimens, sections and microchemical tests
- 2. Familiarization with basic equipments in tissue culture.
- 3. Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation.
- 4. Study of molecular techniques: PCR, Blotting techniques, AGE and PAGE.

Suggested Readings

- Kochhar, S.L. (2011). Economic Botany in the Tropics, MacMillan Publishers India Ltd., New Delhi. 4th edition.
- 2. Bhojwani, S.S. and Razdan, M.K., (1996). Plant Tissue Culture: Theory and Practice. Elsevier Science Amsterdam. The Netherlands.
- 3. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington.



SEMESTER VI

Course: Botany Paper XIII (Theory)
(Ecology)

Full Marks:70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

PLANT ECOLOGY

- 1. Autecology and synecology,
- 2. Biological spectrum
- 3. Ecological factors: climatic, edaphic, topographical and biotic factors
- 4. Population ecology: Characteristics and acquaintance with population models
- 5. Community structure, types of ecosystems (grassland, aquatic, forest and ecological pyramids)
- 6. Community dynamics: Succession, Xerosere, Hydrosere,
- 7. Concept of climax community
- 8. Flow of energy and biogeochemical cycles
- 9. Ecological adaptation: Hydrophytes, Xerophytes, Halophytes

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Course: Botany Paper XIV (Theory) (Environmental Biology)

Full Marks:70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

ENVIRONMENTAL BIOLOGY

- 1. Soil: types, formation, physiochemical nature, water holding capacity, soil profile and soil erosion and conservation
- 2. Non-conventional source of energy
- 3. Biodiversity and it's conservation
- 4. MAB programme,
- 5. Resource ecology,
- 6. Plant indicators
- 7. Environmental pollution: Air pollution, water pollution, sound pollution, nuclear pollution and their control measures.
- 8. Major vegetational belts of India
- 9. Environmental management: Soil, water and air
- 10. Bioindicators



Botany Practical (Semester - VI)

(Based on CC13 & CC14)

Full Marks: 60 Credits: 4 Time: 6 Hrs

- 1. Quantitative analysis of herbaceous vegetation of the college campus for frequency and comparison with Raunkiaer's frequency distribution law (15)
- 2. Ecological anatomy of the given material (10)
- 3. Comment upon the Spots (1-5): 2x5 = 10
- 4. Field Study Report: 05
- 5. Viva Voce: 10
- 6. Class record, Herbarium, Chart, Model etc: 10

Suggested Readings

- 1. Kormondy, E.J. (1996). Concepts of Ecology. Prentice Hall, U.S.A. 4th edition.
- 2. Sharma, P.D. (2010) Ecology and Environment. Rastogi Publications, Meerut, India. 8th edition.



DSE₃

Genetics and Plant Breeding

Full Marks:70 Credits: 4 Time:03 Hours

In all **nine** question of equal value will be set, out of which a student shall have to answer five questions. Q1 will be compulsory, consisting of 10 questions of one marks each. Any four questions shall have to be answered by the examinees out of the remaining eight questions carrying 15 marks each.

Heredity:

- 1. Brief life history of Mendel
- 2. Terminologies
- 3. Laws of Inheritance
- 4. Modified Mendelian Ratios: 2:1- lethal Genes; 1:2:1- Co- dominance, incomplete dominance; D9:7; 9:4:3; 13:3; 12:3:1.
- 5. Chi Square
- 6. Pedigree Analysis
- 7. Cytoplasmic Inheritance: Shell Coiling in Snail, Kappa particles in Paramecium, leaf variegation in Mirabilis jalapa, Male sterility.
- 8. Multiple allelism
- 9. Pleiotropism
- 10. Chromosome theory of Inheritance.

Sex-determination and Sex-linked Inheritance:

Linkage and Crossing over: Linkage: concept & history, complete & incomplete linkage, bridges experiment, coupling & repulsion, recombination frequency, linkage maps based on two and three factor crosses. Crossing over: concept and significance, cytological proof of crossing over.

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Mutations and Chromosomal Aberrations: Types of mutations, effects of physical & chemical mutagens. Numerical chromosomal changes: Euploidy, Polyploidy and Aneuploidy; Structural chromosomal changes: Deletions, Duplications, Inversions & Translocations.

Plant Breeding: Introduction and objectives. Breeding systems: modes of reproduction in crop plants. Important achievements and undesirable consequences of plant breeding.

Methods of crop improvement: Introduction: Centres of origin and domestication of crop plants, plant genetic resources; Acclimatization; Selection methods: For self pollinated, cross pollinated and vegetatively propagated plants; Hybridization: For self, cross and vegetatively propagated plants - Procedure, advantages and limitations.

Quantitative Inheritence: Concept, mechanism, examples. Monogenic vs polygenic Inheritance.

Inbreeding depression and heterosis: History, genetic basis of inbreeding depression and heterosis; Applications.

Crop improvement and breeding: Role of mutations; Polyploidy; Distant hybridization and role of biotechnology in crop improvement.

Practical

- 1. Mendel's laws through seed ratios. Laboratory exercises in probability and chisquare.
- 2. Chromosome mapping using point test cross data.
- 3. Pedigree analysis for dominant and recessive autosomal and sex linked traits.
- 4. Incomplete dominance and gene interaction through seed ratios (9:7, 9:6:1, 13:3, 15:1, 12:3:1, 9:3:4).
- 5. Study of aneuploidy: Down's, Klinefelter's and Turner's syndromes through photographs.
- 6. Photographs/Permanent Slides showing Translocation Ring, Laggards and Inversion

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Bridge.

- 7. Hybridization techniques Emasculation, Bagging (For demonstration only).
- 8. Induction of polyploidy conditions in plants (For demonstration only).

Suggested Readings

- Gardner EJ, Simmons MJ, Snustad DP (2008). Principles of Genetics. 8th Ed. Wiley
 India.
- 2. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics, John Wiley & Sons Inc., India. 5 edition.
- 3. Klug WS, Cummings MR, Spencer, C, Palladino, M (2011). Concepts of Genetics, 10th Ed., Benjamin Cummings
- 4. Griffiths, A.J.F., Wessler, S.R., Carroll, S.B., Doebley, J. (2010). Introduction to Genetic Analysis. W. H. Freeman and Co., U.S.A. 10th edition.
- 5. Pierce BA (2011) Genetics: A Conceptual Approach, 4th Ed., Macmillan Higher Education Learning
- 6. Singh, B.D. (2005). Plant Breeding: Principles and Methods. Kalyani Publishers. 7th edition.
- 7. Chaudhari, H.K. (1984). Elementary Principles of Plant Breeding. Oxford IBH. 2nd edition.
- 8. Acquaah, G. (2007). Principles of Plant Genetics & Breeding. Blackwell Publishing

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DSE4 PROJECT (To Be Assigned)

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Kolhan University, Chaibasa

Courses of Study for B.A. (History) Honours Programme Choice Based Credit System (CBCS) w.e.f. 2017-18

CBCS Course Structure: B.A. History Honours Programme

Semester	Core Course (6 credits each)	Ability Enhancement Compulsory Course (AECC) (2 Papers) (2 credits each) AECC 1: MIL	Skill Enhancement Course (SEC) (2 Papers) (2 credits each)	Elective: Discipline Specific Elective (DSE) (4 Papers) (6 credits each)	Elective: Generic Elective (GE) (4 Papers) (6 credits each) GE 1
	CC 1: History of India up to 300 B.C. CC 2: History of Europe AD 1789-1871	Communication			
П	CC 3: History of India B.C. 300-AD 650 CC 4: History of Europe AD 1871-1945	AECC 2: Environmental Science			GE 2
III	C 5: History of India AD 650-1200 C 6: History of India AD 1200-1526 C 7: History of China and Japan AD 1839-1949		SEC 1: General Knowledge and Current Affairs		GE 3
IV	C 8: History of India AD 1526-1707 C 9: History of India AD 1707-1885 C 10: History of Russia AD 1800-1964		SEC: 2 Personality Development		GE 4
V	CC 11: History of India AD 1885-1950 CC 12: History and Culture of Jharkhand up to 1947			DSE 1: Early Modern Europe 15th -18th Centuries DSE 2: Contribution of Women in the Indian Nation Making: 1857-1947	
VI	CC 13: Emergence of the Modern Indian Press CC 14: Contemporary India AD 1947-2000			DSE 3: Makers of Modern India DSE 4: Project Work	





Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–I

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-1

History of India up to 300 B.C.

Unit 1:Nature of Sources

- a. Archaeology, Epigraphy, Numismatics
- b. Literary Sources: Religious and Non-Religious
- c. Foreign Travelers' Accounts

Unit 2: Earliest Human Organisation

- a. Paleolithic Cultures: Stone Industries and other Technological Developments
- b. Mesolithic Cultures: New Developments in Technology and Economy
- c. Neolithic Age: Neolithic Settlements; Farming and Cereals, Pottery
- d. Chalcolithic Cultures: Chalcolithic Settlements; Importance of Chalcolithic Phase

Unit 3: Harappan Culture

- a. Extent, Major Sites, Town Planning
- b. Agriculture, Technology and Crafts, Trade, Religious Practices
- c. End of the Indus Culture

Unit 4: Vedic Age

- a. Society, Economy, Polity and Religion in the Early Vedic Age
- b. Society, Economy, Polity and Religion in the Later Vedic Age

Unit 5: Developments from Sixth to Fourth Centuries B.C.

- a. New Religious Movements: Jainism, Buddhism, Ajivikas
- b. Emergence of Urban Centres; Social and Material Life
- c. Mahajanpadas, the Magadh Empire; Gana-Sanghas

Suggested Readings

D.N. Jha, Prachin Bharat, Granth Shilpi, 1995

D.N. Jha, K.M.Srimali (eds), Prachin Bharat ka Itihas, Delhi University, 2007

D.D. Kosambi, Prachin Bharat ki Sanskriti aur Sabhyata, Rajkamal Prakashan

J.L. Mehta, Sarita Mehta, History of Ancient India, Lotus Press, 2008

Manik Lal Gupta, Prachin Bharat, Atlantic, 2003

R.S. Sharma, Prarambhik Bharat ka Parichay, Orient Longman, 2004

R.K. Mukherjee, Prachin Bharat, Rajkamal, 1990

Ranabir Chakravarti, Bhartiya Itihas: Adikaal, Orient Blackswan, 2012

Romila Thapar, *Prachin Bharat*, Rajkamal Prakashan



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–I

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-2

History of Europe (c. AD 1789–1871)

Unit 1: The French Revolution

- a. Ancient Regime
- b. Role of the Philosophers
- c. Phases of the French Revolution 1789-99
- d. Legacy of the French Revolution

Unit 2: Napoleon Bonaparte

- a. Emergence of Napoleon Bonaparte
- b. Reorganisation of France and Europe
- c. Fall of Napoleon Bonaparte

Unit 3: Restoration and Revolution: c. 1815-1848

- a. Congress of Vienna 1815
- b. Metternich and the Conservative Order
- c. Revolutions of 1830 and 1848

Unit 4: Changes and Developments: c. 1848-1871

- a. The Emergence of Nation-States in Central Europe
- b. Unification of Italy
- c. Unification of Germany

Suggested Readings

Devender Singh Chauhan, Europe ka Itihas, Madhya Pradesh Hindi Granth Academy, Bhopal, 1996

Devesh Vijay, Adhunik Europe ka Itihas, University of Delhi, 2010

Devesh Vijay (ed), Europeeya Sanskriti (1400-1800), University of Delhi, 2010

Dharamvir Bhardwaj, Adhunik Vishwa, Gyan Books, 2004

Harishankar Sharma, Adhunik Vishwa, Malik & Company, Delhi, 2009

Indira Arjun Dev and Arjun Dev, Samkalin Vishwa ka Itihas, Orient Blackswan, 2009

J.A.R. Marriott, *The Remaking of Modern Europe*, 1789-1878, London, 1923

Jain and Mathur, Adhunik Vishva ka Itihas (1500-2000), Jain Prakashan Mandir, Jaipur, 2002

L. Mukherjee, A Study of Modern Europe and the World, 1815-1950, Kolkata, 1950

Norman Lowe, Mastering Modern World History, Macmillan, 2005

Parthasarthi Gupta (ed), Europe ka Itihas, University of Delhi, 1993

Satyaketu Vidyalankar, Adhunik Vishwa ka Itihas, Sri Saraswati Sadan, Masuri, 1992



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–II

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-3

History of India B.C. 300-A.D. 650

Unit 1: Mauryan Empire

- a. Political History; Chandragupta Maurya and Ashoka
- b. Administrative Structure, Economy and Society
- c. Art and Architecture

Unit 2: Post-Mauryan Developments

- a. Bactrian Greeks, Scythians and Kushanas: Social, Economic, Political and Cultural Developments
- b. Sangam Age: Society; Language and Literature

Unit 3: The Age of the Guptas

- a. Political History; State and Administrative Institutions of the Guptas
- b. Social and Economic Changes; Cultural Developments
- c. Maukharis, Vakatakas, Chalukyas and Later Guptas

Unit 4: Post-Gupta Period

- a. Harshavardhana: Political System and Administrative Institutions
- b. Chalukyas and Pallavas: Polity, Society and Economy

Suggested Readings

- A. L. Basham, A Wonder that was India, Rupa, New Delhi, 1994
- B.P. Sahu, Society and Culture in Post-Mauryan Period 200 BC-AD 300, Tulika, 2015
- D.D. Kosambi, Prachin Bharat ki Sanskriti aur Sabhyata, Rajkamal Prakashan
- D.N. Jha, K.M.Srimali (eds), Prachin Bharat ka Itihas, Delhi University, 2007
- D.N. Jha, Ancient India in Historical Outline, Manohar, New Delhi, 1998
- D.N. Jha, Prachin Bharat, Hindi Madhyam Karyanvaya Nideshalay, Delhi University, 1995
- J.L. Mehta, Sarita Mehta, History of Ancient India, Lotus Press, 2008
- K.A.N. Sastri, History of South India, OUP, 1975
- R.K. Mukherjee, Prachin Bharat, Raj Kamal Prakashan, New Delhi, 1990
- R.S. Sharma, India's Ancient Past, OUP, 2005
- R.S. Sharma, Prarambhik Bharat ka Parichay, Orient Longman, 2004

Romila Thapar, Prachin Bharat, Rajkamal Prakashan

Romila Thapar, Ashok aur Maurya Samrajya ka Patan, Granth Shilpi, Delhi, 1997

U.N. Ghosal, Studies in Indian History and Culture, Orient Longman, 1965

Upinder Singh, Nayanjot Lahiri, Ancient India: New Research, OUP, 2010



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–II

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-4

History of Europe (c. AD 1871–1945)

Unit 1: Europe c. 1871-1914

- a. Bismarckian Diplomacy and System of Alliances
- b. Eastern Question
- c. Scramble for African and Asian Colonies
- d. Power Blocks and Alliances

Unit 2: Europe c. 1914-1919

- a. The First World War: Causes, Nature and Impact
- b. The Russian Revolution of 1917
- a. The Versailles Settlements of 1919

Unit 3: Europe between the World Wars c. 1919-1939

- a. The League of Nations: Aims, Structure, Evaluation
- b. Reparation Problems
- c. The Great Depression and its Impact
- d. French Search for Security

Unit 4: Totalitarianism in Europe

- a. Fascism in Italy; Mussolini
- b. Nazism in Germany; Hitler
- c. The Second World War: Origin, Nature and Impact

Suggested Readings

Ben Walsh, Essential Modern World History, Hoddar Murray, 2002

David Thomson, Europe since Napoleon, Penguin Books, London, 1990

Devender Singh Chauhan, Europe ka Itihas, Madhya Pradesh Hindi Granth Academy, 1996

Devesh Vijay, Adhunik Europe ka Itihas, University of Delhi, 2010

Dharamvir Bhardwaj, Adhunik Vishwa, Gyan Books, 2004

Harishankar Sharma, Adhunik Vishwa, Malik & Company, Delhi, 2009

Jain and Mathur, Adhunik Vishva ka Itihas (1500-2000), Jain Prakashan Mandir, Jaipur, 2002

James Joll, Europe 1870 se, Hindi Madhyam Karyanvaya Nideshalaya, University of Delhi, 1991

L. Mukherjee, A Study of Modern Europe and the World: 1815-1950, Kolkata, 1950

Parthasarthi Gupta (ed), Europe ka Itihas, University of Delhi, 1993

Satyaketu Vidyalankar, Adhunik Vishwa ka Itihas, Sri Saraswati Sadan, Masuri, 1992





Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–III

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-5

History of India (c. AD 650–1200)

Unit 1: Political Developments

- a. Nature of Regional Politics; Pratiharas, Palas, Rashtrakutas and Cholas
- b. Arab Conquest of Sindh: Nature and Impact
- c. Ghaznavid and Ghurid Invasions: Nature and Impact

Unit 2: Economy

- a. Land Revenue System, Land Grants and Agrarian Expansion
- b. Urban Centres and Population Increase
- c. Trade, Crafts and Merchant Guilds

Unit 3: Society

- a. Varna-Jati; Proliferation of Castes, Status of Women
- b. Property Rights, Forms of Marriage; Marriage and Family Life

Unit 4: Culture and Religion

- a. Sanskrit Literature; Growth of Literature in Regional Languages
- b. System of Knowledge: Schools of Philosophy, Science, Mathematics and Astronomy
- c. Temple and Cave Architecture; Sculpture

Suggested Readings

- A.B. Pandey, Early Medieval India, 1960
- A. L. Basham, A Cultural History of India, Oxford University Press, 1997
- B. N. Sharma, Social Life in Northern India (AD 600-1200), Munshiram Manoharlal, 1966
- B.D. Chattopadhyay, The Making of Early Medieval India, OUP, 1994
- Dilip M. Menon, Madhyakaleen Bharat ka Sanskritic Itihas, Orient Blackswan, 2012

Irfan Habib, Madhyakaleen Bharat ka Aarthik Itihas: Ek Sarvekshan, Rajkamal, 2016

- K.A. Nizami, Politics and Society during the Early Medieval Period, Vol. I, 1981
- R.K. Mukherjee, Prachin Bharat, Rajkamal Prakashan, Delhi, 1962

Romila Thapar, The Penguin History Of Early India: From The Origins to AD 1300, Penguin, 2003

Satish Chandra, Madhyakaleen Bharat: Rajniti, Samaj aur Sanskriti, Orient BlackSwsan

U.N. Ghosal, Studies in Indian History and Culture, Orient Longman, 1965

Upinder Singh, A History of Ancient and Early Medieval India: From Stone Age to the 12th Century, Pearson, 2009

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Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–III

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-6

History of India (c. AD 1200–1526)

Unit 1: Sources

a. Sources and Historiography; Ziauddin Barani, Amir Khusrau, Ibn Batuta

Unit 2: Polity

- a. Phases of the Delhi Sultanate: 1200-1290; 1290-1350; 1350-1526
- b. Theories of Kingship–Balban, Alauddin Khilji, Muhammad bin Tughlaq
- c. Administrative Structure: Evolution of Iqta, Amarnayaks/Nayankar System
- d. Provincial Dynasties: Vijayanagar and Bahamani Kingdoms

Unit 3: Economy

- a. Agrarian Economy of Delhi Sultanate: Agricultural and non Agricultural Production
- b. Revenue Systems and Magnitude of Taxation
- c. Growth of Urban Centres and Crafts Production
- d. Trade and Commerce

Unit 4: Society and Culture

- a. Sufism: Sufi Silsilahas, Doctrines and Practices
- b. Bhakti Movement: Kabir, Nanak, Chaitanya
- c. Architecture: Sultanate and Provincial Architecture

Suggested Readings

A.B.M. Habibullah, *The Foundation of Muslim Rule in India*, Central Book Depot, Allahabad, 1967 Burton Stein, *Vijayanagara*, CUP, 1989

Dilip M. Menon, Madhyakaleen Bharat ka Sanskritic Itihas, Orient Blackswan, 2012

H.K. Sherwani, *The Bahmanis of Deccan*, Munshiram Manoharlal, 1985

H.C. Verma (ed), Madhyakaleen Bharat, Vol.1, University of Delhi, 2002

I.H. Quereshi, The Administration of the Sultanate of Delhi, Pakistan Historical Society, Karachi, 1958

K. S. Lal, History of the Khaljis, 1290-1320, The Indian Press, Allahabad, 1967

Irfan Habib, Madhyakaleen Bharat ka Aarthik Itihas: Ek Sarvekshan, Rajkamal, 2016

K.A. Nizami, Religion and Politics in India during the Thirteenth Century, Aligarh, 1961

Satish Chandra, Medieval India, From Sultanate to the Mughal, Part-I &II, New Delhi, 2009

Satish Chandra, History of Medieval India, Orient BlackSwsan, 2007

Satish Chandra, Madhyakalin Bharat: Rajniti, Samaj avam Sanskriti, Orient BlackSwan, 2007

Sunil Kumar, Emergence of the Delhi Sultanate, Permanent Black, Delhi, 2007



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–III

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-7

History of China and Japan (c. AD 1839-1949)

Section A - China

Unit 1: China during the 19th century

- a. The Canton Commercial System
- b. Opium Wars, The 'Open Door' Policy

Unit 2: Nationalism in China

- a. Boxer Rebellion
- b. Revolution of 1911: Causes, Nature and Significance
- c. Sun Yat-sen and his Contribution; Emergence of the Republic and Yuan Shih Kai

Unit 3: Communism in China (1921-1949)

- a. Formation of the CCP
- b. The Guomintang (Nationalist Party or KMT); The First United Front
- c. Rise of Mao Tse-tung; The Second United Front

Section B - Japan

Unit 4: Transition from Feudal Society to Capitalist Society

a. Meiji Restoration: Its Nature and Significance, Reform Measures

Unit 5: Emergence of Japan as an Imperial Power

- a. Sino-Japanese relations; Russo-Japanese war
- b. World War I and after

Unit 6: Democracy and Militarism

- a. Rise of Political Parties and Failure of the Democratic System
- b. Rise of Militarism Nature and Significance
- c. Japan and the Second World War

Suggested Readings

C.E. Jini, China ka Itihas, Vaani Prakashn, New Delhi

D.N. Verma, Asia ka Adhunik Itihas, Bharati Bhawan, reprint, 2006

K.T.S. Serao, Adunik China ka Itihas, Hindi Madyam Karyanavan Nideshalaysa, Delhi University

K.T.S. Serao, Adunik Japan ka Itihas, Hindi Madyam Karyanavan Nideshalaysa, Delhi University

Y. Hsu Immannuse, The Rise of Modern China, OUP, 1989

W.E. Beasley, The Rise of Modern Japan, Weidenfield & Nicholson, 1990

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Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–IV

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-8

History of India (c. AD 1526–1707)

Unit 1: Sources

- a. Sources and Historiography: Abul Fazl, Abdul Qadir Badauni, Abdul Hamid Lahori
- **b.** Vernacular Sources; Travelogues: Bernier, Manucci

Unit 2: Foundation of the Mughal Rule

- a. Struggle for Empire in North India- Significance of Babur and Humayun's Reign
- b. Sher Shah and his Administrative Reforms

Unit 3: Expansion and Consolidation of the Empire

- a. Imperial and Administrative System under Akbar
- b. The Mansabdari System
- c. Mughal Nobility, Zamindars and Jagirdars
- d. The Mughals in the Deccan, North-Western Frontier and Central Asia

Unit 4: State, Ideology and Religion

- a. Akbar's Sulh-i-Kul; Akbar's Attitude towards Religion and the State
- b. The Mughals and the Rajputs in the 16th and 17th Centuries

Unit 5: Crisis of the Mughal Empire

- a. Rise of the Marathas under Shivaji, Administrative System
- b. Popular Revolts within the Mughal Empire the Jats, Satnamis, Afghans and the Sikhs
- c. Decline of the Mughal Empire

Suggested Readings

H.C. Verma (ed), Madhyakaleen Bharat (1540-1761), Vol.2, University of Delhi, 2002

Harbans Mukhia, The Mughals of India, Blackwell Publishing, 2005

Harishankar Srivastava, Mughal Sashan Pranali, Vani Prakashan, New Delhi, 1999

I. H. Quereshi, The Administration of the Mughal Empire, OUP, Karachi, 1966

Irfan Habib, Medieval India: The Study of a Civilization, National Book Trust, 2008

Irfan Habib, The Agrarian System of Mughal India, 1556-1707, OUP, 1999

Jadunath Sarkar, A Short History of Aurangzeb, reprint, Orient BlackSwan, 2009

Jadunath Sarkar, Shivaji and his Times, Calcutta, 1952

Satish Chandra, Medieval India, From Sultanate to the Mughals, Part II, New Delhi, 2009

Satish Chandra, History of Medieval India, Orient BlackSwsan, 2007

Satish Chandra, Madhyakaleen Bharat: Rajniti, Samaj aur Sanskriti, Orient BlackSwsan, 2007



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–IV

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-9

History of India (c. AD 1707–1885)

Unit 1: Expansion and Consolidation of Colonial Power

a. Expansion and Consolidation of British Rule: Bengal, Mysore, Awadh, Maratha, Punjab

Unit 2: Rural Economy and Society

- a. Colonial Land Revenue Settlements: Permanent Settlement, Ryotwari and Mahalwari Systems
- b. Commercialization of Agriculture

Unit 3: Trade and Industry

- a. The Process of Deindustrialization and the Related Debates
- b. Trade and Banking
- c. Emergence of Modern industries—Railways, Jute and Cotton and Steel (especially Tata Iron and Steel Company in Jamshedpur)

Unit 4: Early Resistance to Colonial Rule

- a. Tribal Protest in Jharkhand–Kol Revolt, Santhal Hul
- b. The Revolt of 1857-58: Causes, Interpretations, Consequences

Unit 5: Growth of Modern Education and Socio-Religious Movements

- a. Rise of Modern Education and Press
- b. Socio-Religious Movements: Brahmo Samaj, Arya Samaj, Theosophical Society
- c. Early Political Organisations leading to the Formation of the Indian National Congress

Suggested Readings

Anil Seal, The Emergence of Indian Nationalism, Cambridge University Press, 1968

B.T. McCully, English Education and the Origins of Indian Nationalism, Peter Smith, 1966

Bipan Chandra, Adhunik Bharat ka Itihas, Orient BlackSwan, 2009

Bipan Chandra, History of Modern India, Orient BlackSwan, 2009

D. Kopf, The Brahmo Samaj and the Shaping of the Modern Indian Mind, Princeton, 1979

I. Copland, The British Raj and the Indian Princes, Orient Longman, Bombay, 1982

J.R. McLane, *Indian Nationalism and the Early Congress*, Priceton University Press, 1977

Nemai Sadhan Bose, Indian Awakening and Bengal, Firma K.L. Mukhopadhyay, Calcutta, 1976

Michael H. Fisher, Indirect Rule in India: Residents and the Residency System, 1764-1858, OUP, 1991

Ranajit Guha, Elementary Aspects of Peasant Insurgency in Colonial India, OUP, 1993

S.R. Mehrotra, The Emergence of the Indian National Congress, Delhi, 1971

Sekhar Bandyopadhyay, Plassey se Vibhajan Tak: Adhunik Bharat ka Itihas, Orient Longman, 2007



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–IV

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-10

History of Russia (c. AD 1800–1964)

Unit 1:

- a. Eastern Question and Russia
- b. Crimean War (1853-56)
- c. Czar Alexander II (1855-81): Reforms, Foreign Policy
- d. Russo-Turkey War (1877-78): Causes and Results
- e. Berlin Congress (1878)

Unit 2:

- a. Development of Revolutionary Movements; Nihilist Movement
- b. Czar Alexander III (1881-1894): Domestic and Foreign Policies
- c. Revolution of 1905: Causes and Results

Unit 3:

- a. Russo-Japanese War of 1905: Causes and Results
- b. Russia and the First World War
- c. Menshevik Revolution, March 1917
- d. Bolshevik Revolution, October 1917

Unit 4:

- a. Vladimir Lenin: Career, Achievements, The New Economic Policy
- b. Joseph Stalin: Domestic and Foreign Policies
- c. The Communist Party of the USSR
- d. Soviet Union and the Second World War

Suggested Readings

David Lane, Politics and Society in the USSR, 1971

D. Lieven, Russia and the Origin of the First World War, 1983

Dhanpati Pandey, Europe ka Itihas, Bharati Bhawan, Patna, 2003

Karuna Kaushik, Samrajyavadi avam Samyavadi Russia, Delhi University

- L. Kochan, Russia in Revolution, 1890-1918, Penguin, 1973
- L. Mukherjee, A Study of Modern Europe and the World, 1815-1850, Kolkata, 1950
- M. Kochan and R. Abraham, The Making of Modern Russia, 1983
- P. Ingram, The USSR: 1905-1941, Cambridge University Press, 1994
- R. Freeborn, A Short History of Modern Russia, Hodder & Stoughton, 1966



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–V

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-11

History of India (c. AD 1885–1950)

Unit 1: National Movement up to 1919

- a. Formation of the Indian National Congress
- b. Partition of Bengal and Swadeshi Movement
- c. Revolutionaries in India and Abroad

Unit 2: National Movement since 1919

- a. Mahatma Gandhi: His Perspectives and Methods
- b. Khilafat and Non-Cooperation Movements; Civil Disobedience Movement
- c. Revolutionary and Agrarian Movements

Unit 3: Movement since 1935

- a. Working of Congress and non-Congress Provincial Ministries
- b. Communal Politics and Demand for Pakistan
- c. Quit India Movement
- d. Subhash Chandra Bose and Indian National Army

Unit 4: Partition and Independence

- a. Cripps Mission and Cabinet Mission
- b. Partition and Independence
- c. The Making of the Indian Constitution

Suggested Readings

Anil Seal, Emergence of Indian Nationalism, Cambridge University Press, 1960

Anita Inder Singh, The Origins of the Partition of India 1936-1947, OUP, 1987

B.T. McCully, English Education and the Origins of Indian Nationalism, Peter Smith, 1966

B.L. Grover, Adhunik Bharat ka Itihas, S. Chand Publishing, 1981

Bipan Chandra, et al, Freedom Struggle, NBT, 2007

Bipan Chandra, Adhunik Bharat ka Itihas, Orient BlackSwan, 2009

Bipan Chandra, et al, Bharat ka Swatantrata Sangharsh, University of Delhi, 1998

Nemai Sadhan Bose, The Indian National Movement: An Outline, Calcutta, 1984

Ram Lakhan Shukla (ed), Adhunik Bharat ka Itihas, University of Delhi, 1990

Sekhar Bandyopadhyay, Plassey se Vibhajan Tak: Adhunik Bharat ka Itihas, Orient Longman, 2007

Sumit Sarkar, Adhunik Bharat, Rajkamal Prakashan

Sumit Sarkar, The Swadeshi Movement in Bengal, Peoples' Publishing House, 1970

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W. SINGHBHUM



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–V

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-12

History and Culture of Jharkhand up to 1947

Unit 1: Early History of Jharkhand

- a. Settlement of Tribes in Jharkhand Region
- b. Socio-Political Formations— Parha-Panchayat, Manki-Munda, Parganait-Manjhi, Dhumkuria, Gitiora, Bitlaha

Unit 2: Jharkhand in Medieval Period

- a. Nagbanshi Raj, Chero Raj, Singhbhum Chiefs
- b. Turko-Afghans in Jharkhand
- c. Mughals in Jharkhand

Unit 3: Early Colonial Contacts and Tribal Response

- a. British Entry into Jharkhand and its Relations with Native Rajas: Nagvanshi Raja, Chero Raj and Singhbhum Chiefdom
- b. Colonial Policies and its Impact: Agriculture, Land, Forest and Railways
- c. Tribal Revolts and Movements in Jharkhand: Kol Revolt, Santhal Hul, Birsa Ulgulan, Tana Bhagat Movement

Unit 4: Adivasi Culture of Jharkhand

- a. Festivals, Religion, Music and Dance
- b. Art and Architecture; Language and Literature

Suggested Readings

Asoka Kumar Sen, *Indigeneity, Landscape and History: Adivasi Self-fashioning in India*, Routledge, London, NY, 2017

Asoka Kumar Sen, From Village Elder to British Judge, Orient BlackSwan, 2012

Asoka Kumar Sen, Representing Tribe, Concept Publishing Company, 2011

B Virottam, Jharkhand: Itihas avam Sanskriti, Patna, 2000

B Virottam, The Nagbansis and Chero, New Delhi, 1972

K.S. Singh, Tribal Society in India, Manohar, New Delhi, 1985

K.S. Singh, Tribal Movements in India, 2 vols, New Delhi, 1982

M. Sahu, Kolhan under the British Rule, Calcutta, 1985

Ranendra and Sudhir Paul (eds.), Jharkhand Encyclopaedia, 4 vols, Vani Parakashan, 2008

Sanjukta Das Gupta, Adivasis and the Raj, Orient Blackswan, 2011

Sarat Chandra Roy, The Mundas and their Country, Catholic Press, Ranchi, 2nd reprint 1995

Sarat Chandra Roy, The Oraons of the Chota Nagpur, Catholic Press, Ranchi, 1915

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Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–VI

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-13

Emergence of the Modern Indian Press

Unit 1: Early Phase

- a. Advent of the Printing Press in India Missionaries Efforts
- b. Pioneering Attempts: James Hicky –Bengal Gazette, 1780
- c. Early Publications from Bengal: Calcutta Gazette, Bengal Journal, Oriental Magazine and Calcutta Chronicle
- d. Attitude of East India Company

Unit 2: Growth of Indian Press in the 19th Century

- a. James Silk Buckingham and the Calcutta Journal, 1818
- b. Licensing Regulation Act of 1823
- c. Ram Mohan Roy and the Indian Press: *Brahmanical Magazine*, *Persian Weekly*, *The Sambad Kaumudi*
- d. Impact of Modern Communication on the Bengal Press

Unit 3: Growth of Vernacular Press

- a. Beginning of Newspapers in Indian Languages
- b. Works of Serampur Missionaries: the *Dig Darsan*, *Bombay Samachar* in Gujarati, *Sayyad un Akbar*, *Rast Gofthar* in Urdu, *Madras Courier*

Unit 4: Print and Censorship

- a. The Vernacular Press Act, 1878; Indian Official Secret Act, 1889
- b. Press Censorship of Lord Canning

Unit 5: Print and the Indian National Movement

- a. Tilak and Gandhi as Journalist
- b. Role of Press in the National Movement

Suggested Readings

Abhijit Gupta and Swapan Chakravorty, Moveable Type, Permanent Black, 2008

G.C. Kundra, History of Journalism in India, 2011

Mohit Moitra, A History of Indian Journalism, National Book Agency, Calcutta, 1955

P. Rangaswami, Journalism in India from the Earliest to the Present Day, Sterling Publishers, 1989

Robin Jeffrey, India's Newspaper Revolution, Oxford University Press, 2003

Roland E. Wolesley, Journalism in Modern India, Asia Publishing House, Bombay, 1964

S.K. Mishra, Hindi Patrakarita, Bhartiya Gyanpeeth, 1968

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ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM



Kolhan University, Chaibasa B.A. History Honours, CBCS, Semester–VI

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Core Course-14

Contemporary India (c. AD 1947–2000)

Unit 1: Emergence of the New State

- a. Partition and its Scars
- b. Integration of Princely States

Unit 2: Making of the Republic

- a. The Constituent Assembly
- b. Drafting of the Constitution
- c. Reorgansation of States

Unit 3: Era of Development and Progress

- a. Nehruvian Policy of International Relations; Non Alignment Movement
- b. Relation with China-Panchasheel
- c. Association with Regional Associations-Commonwealth, SAARC
- d. Planned Development–Mixed economy

Unit 4: India since 1960

- a. Challenges from Outside: Chinese War, Pakistani Wars
- b. Emergence of India as a Nuclear Power
- c. Emergency and J. P. Movement
- d. Economic Liberalisation, Globalisation, Environmental Issues

Suggested Readings

Anita Inder Singh, The Origins of the Partition of India 1936-1947, OUP, 1987

Bipan Chandra, India Since Independence, Penguin Books, 2008

Bipan Chandra et al, Aazadi ke bad ka Bharat, Delhi University

Bimal Prasad, Gandhi, Nehru and J.P.: Studies in Leadership, Delhi, 1985

C.P. Bhambri, The Indian State: Fifty Years, Delhi, 1997

Daniel Thorner, The Shaping of Modern India, New Delhi, 1980

Krishan Bhatia, The Ordeal of Nationhood, NY, 1971

Sucheta Mahajan, Independence and Partition, Sage Publications, New Delhi, 2000

Sukhamoy Chakravarty, Development Planning: The Indian Experience, OUP, 1987

Sunil Khilnani, The Idea of India, London, 1997

V.P. Dutt, India's Foreign Policy since Independence, 2007

V.P. Menon, The Integration of Indian States, Orient Longman, 1985



Kolhan University, Chaibasa B.A. History Honours (DSE-1), CBCS, Semester–V

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Elective Course (DSE)–1

Early Modern Europe (15th to 18th Centuries)

Unit 1:

- a. Renaissance
- b. Renaissance Humanism
- c. Impact of Renaissance

Unit 2:

- a. Reformation: Origin and Courses
- b. Martin Luther and Lutheranism
- c. John Calvin and Calvinism
- d. Counter Reformation

Unit 3:

- a. Geographical Discoveries: The Exploration of the New World
- b. Portuguese and Spanish Voyages
- c. Commercial Revolution

Unit 4:

- a. Scientific and Technological Revolution
- b. Industrial Revolution
- c. Enlightenment and Philosophers: Thomas Hobbes, Descartes, Montesquieu, Rousseau, Voltaire

Suggested Readings

Arvind Sinha, Sankrantikaleen Europe, Granth Shilpi, Delhi, 2009

Carlo Cipolla, Before the Industrial Revolution, Routledge, 1993

Devender Singh Chauhan, Europe ka Itihas, Madhya Pradesh Hindi Granth Academy, Bhopal, 1996

Devesh Vijay (ed), Europeeya Sanskriti (1400-1800), University of Delhi, 2010

Emmeline M. Tanner, The Renaissance and The Reformation: 1494-1610, Oxford

Hutton Webster, Early European History, D.C. Heath and Co., New York

Robinson and Beard, Outlines of European History, Part I, Ginn and Company, New York

Roy Porter, The Enlightenment, Palgrave, 1990

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Kolhan University, Chaibasa B.A. History Honours (DSE-2), CBCS, Semester–V

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Elective Course (DSE)–2

Contribution of Women in the Indian Nation Making: 1857–1947

Unit 1: The Revolt of 1857 and Women

- a. Rani Laxmi Bai of Jhansi
- b. Rani Avanti Bai of Ramgarh
- c. Begum Hazrat Mahal

Unit 2: Socio-religious Movements and Women

- a. Role of Brahmo Samaj, Arya Samaj and Theosophical Society in Awakening Women
- b. Ishwar Chandra Vidyasagar and the Widow Remarriage Act

Unit 3: Freedom Struggle: Gandhian and Revolutionary Movements

- a. Pandita Ramabai, Swarna Kumar Devi, Sarojini Naidu, Sarala Devi
- b. Bhikaji Rustom Cama, Bina Das, Kalpana Datta, Pritilata Waddedar

Unit 4: Freedom Struggle: Last Phase

a. Rajkumari Amrit Kaur, Mira Behn, Sucheta Kripalani, Aruna Asaf Ali

Unit 5: Emergence of Women's Organisation in Pre-independent India

a. Poona Seva Sadan 1917, Women's Indian Association 1917, Rashtriya Stree Sabha 1921, All India Women's Conference 1927

Suggested Readings

Bharati Ray, Women of India: Colonial and Post-Colonial Periods, PHISPC Series, Vol. IX, Part 3, 2005

Devaki Jain (ed), Indian Women, Publications Division, Delhi, 1976

Geraldine Forbes, Women in Modern India, Cambridge University Press, 1998

Gedge and Choksi (eds), Women in Modern India, Bombay, 1929

Leela Kasturi and Vina Mazumdar, Women and Indian Nationalism, Vikas, Delhi, 1994

Manmohan Kaur, Women in India's Freedom Struggle, Sterling, Delhi, 1985

Radha Kumar, Stri Sangarsh Ka Itihas, 1800-1990, Vani Prakashan, 2005

Rajan Mahan, Women in Indian National Congress (1921-1931), Rawat Publications, Jaipur, 1999

Sumit Sarkar and Tanika Sarkar (eds), Women And Social Reform in Modern India, 2 vols, Orient Blackswan, 2011

Uma Chakravarti, Rewriting History: The Life and Times of Pandita Ramabai, Kali for Women, Delhi, 1998

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Kolhan University, Chaibasa B.A. History Honours (DSE-3), CBCS, Semester–VI

Marks: 70 (ESUE), 30 (SIA)

Credits: 6

Elective Course (DSE)–3

Makers of Modern India

Unit 1: Socio-Political

- a. Raja Ram Mohan Roy
- b. Gopal Krishna Gokhale
- c. Bal Gangadhar Tilak
- d. Mahatma Gandhi
- e. B.R. Ambedkar

Unit 2: Socio-religious

- a. Dayanand Saraswati
- b. Ramakrishna Paramhans
- c. Swami Vivekananda
- d. Aurobindo Ghose
- e. Annie Besant

Unit 3: Socio-cultural

- a. Rabindranath Tagore
- b. Sarojini Naidu
- c. Sarvepalli Radhakrishnan

Unit 4: Science and Technology

- a. J.C. Bose
- b. P.C. Roy
- c. Homi Bhabha
- d. A.P.J. Abdul Kalam

Suggested Readings

Anil Seal, Emergence of Indian Nationalism, Cambridge University Press, 1960

B.T. McCully, English Education and the Origins of Indian Nationalism, Peter Smith, 1966

Dev Raj Bali, Modern Indian Thought

D.B. Dhanapala., Eminent Indians

Daniel Thorner, The Shaping of Modern India, New Delhi, 1980

Ernest Gellener, Nations and Nationalism, Basil Blackwell, 1983

Publication Division, Great Men and Women

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ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM

KOLHAN UNIVERSITY, CHAIBASA



UNDERGRADUATE PROGRAMME CBCS Syllabus Of B.Sc. Chemistry Honours

(Semester System)

w.e.f Session 2017-20

Registrar Kolhan University, Chaibasa

ACTING PRINCIPAL
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MANOHARPUR, W SINGHBHUM

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Semester	Description			
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I	Core Course 2: Physical Chemistry 1			
	Core Course (P)1: Inorganic Practical			
	Core Course 3: Organic Chemistry 1			
II	Core Course 4: Physical Chemistry 2			
	Core Course (P) 2 :Physical Practical			
	Core Course 5: Inorganic Chemistry 2			
III	Core Course 6 : Organic Chemistry 2			
111	Core Course 7: Physical Chemistry 3			
	Core Course (P) 3 : Organic Practical			
	Core Course 8 : Inorganic Chemistry 3			
IV	Core Course 9 : Organic Chemistry 3			
IV	Core Course 10 : Physical Chemistry 4			
	Core Course (P) 4: Inorganic Practical			
	Core Course 11 : Organic Chemistry 4			
	Core Course 12 : Physical Chemistry 5			
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VI	DSE 3 : Spectroscopy (Physical Chemistry)			
VI	Core Course (P) 6: Inorganic Practical			
	DSE Practical 2 :Organic Practical			
	DSE 4 : Project Work			

UNDERGRADUATE PROGRAMME

Chemistry

B.Sc. (Hons.)

Semester – I

Core Course: 1

Inorganic Chemistry

Full Marks – 70 Time:03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Atomic Structure: 08 Hrs.

Idea of de Broglie matter waves, Heisenberg uncertainty principle, atomic orbitals, schrodinger's wave equation, significance of Ψ and Ψ^2 , quantum numbers, radial and angular wave functions and probability distribution curves, shapes of s, p, d orbitals. Aufbau and Pauli's exclusion principles, Hund's rule of multiplicity, Electronic configuration of the elements, effective nuclear charge.

2. Periodic Properties: 10 Hrs.

Atomic and ionic radii, ionization energy, electron affinity and electronegativity – definition, methods of determination or evaluation in periodic table and applications in predicting and explaining the chemical behaviour.

3. Chemical Bonding: 10 Hrs.

- (a) Covalent bon-valence bond theory and its limitation, directional characteristics of covalent bond, various types of hybridization and hapes of simple inorganic molecules and ions. Valence shall electron pair repulsion (VSEPR) theory to NH₃, H₃O⁺, SF₆, ClF₃, ICl and H₂O. MO theory homonuclear and heteronuclear (CO and NO) diatomic molecules, multicenter bonding in electron deficient molecules, bond strength and bond energy, percentage ionic character from dipole moment and electronegativity difference.
- (b) Ionic Solids Ionic structures, radius ratio rule and coordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy and Born-Haber cycle, solvation energy and solubility of ionic solids, polarizing power and polarizability of ions, Fajan's rule Metallic bond-free electron, valence bond and band theories.
- (c) Weak interactions Hydrogen bonding, van-der Waals' forces.

4. s-Block Elements: 05 Hrs.

Comparative study, diagonal relationships, salient features of hydrides, solvation and complexation tendencies including their function in biosystems, an introduction to alkyls and aryls.

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5. p-Block Elements:

08 Hrs.

Comparative study (including diagonal relationship) of groups 13-17 elements, compounds like hydrides oxides, oxyacids and halides of groups 13-16, hydrides of boron-diborane and higher boranes, borazine, borohydrides, fullerences, carbides, fluorocarbons, silicates (structural principle), tetrasulphurtetranitride, basic properties of halogens, interhalogens and polyhalides.

6. Chemistry of Noble Gases:

06 Hrs.

Chemical properties of the noble gases, chemistry of xenon, structure and bonding in xenon compounds.

Books Recommended

Inorganic Chemistry

- 1. Pradeep's Inorganic Chemistry, Vol.- I, II and III
- 2. Dinesh Inorganic Chemistry, Vol.- I, II and III
- 3. Text Book of Inorganic Chemistry by P.L. Soni
- 4. Selected Topics in Inorganic by Satyaprakash, Malik, Madan and Tuli
- 5. Advanced Inorganic Chemistry by Gurdeep and Harish
- 6. Advanced Inorganic Chemistry by Cotton and Wilkinsons
- 7. Principles of Inorganic Chemistry by Puri, Sharma and Kalia
- 8. Inorganic Chemistry, by Moillers

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM

UNDERGRADUATE PROGRAMME

Chemistry

B.Sc. (Hons.)

Semester – I

Core Course: 2

Physical Chemistry

Full Marks – 70 Time:03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Mathematical Concepts:

08 Hrs.

Logarithmic relations, curve sketching, linear graphs and calculation of slopes, differentiation of functions like e^x , x^n , sinx, tanx&loge^x; maxima and minima, partial differentiation and reciprocity relations. Integration of some useful/relevant functions: permutations and combinations, Factorials. Probability.

2. Gaseous States: 10 Hrs.

Postulates of kinetic theory of gases, deviation from ideal behaviour, van-der Waals' equation of state. Critical phenomena: PV isotherms of real gases, continuity of states, the isotherms of van-der Waals' equation, relationship between critical constants and van-der Waals' constant, the law of corresponding states, reduced equation of state. Molecular velocities: Root mean square, average and most probable velocities. Qualitative discussion of the Maxwell's distribution of molecular velocities, collision number, mean free path and collision diameter. Liquefaction of gases (based on Joule-Thomson effect).

3. Liquid State: 06 Hrs.

Intermolecular forces, structure of liquids (a qualitative description). Structural differences between solids, liquids and gases. Liquid crystals: difference between liquid crystal, solid and Thermography and seven segment cell.

4. Thermodynamics 1:

10 Hrs.

Definition of thermodynamic terms system, surrounding etc. Types stems, intensives and extensives properties, properties. State and path functions and their differentials. Themodynamic process. Concept of heat and work. First Law of Thermodynamics: Statement, definition of internal energy and enthalpy. Heat capacity, heat capacities at constant volume and pressure and their relationship. Joule's law-Joule-Thomson coefficient and inversion temperature. Calculation of w,q, dU&dH for the expansion of ideal gases under isothermal and adiabatic conditions for reversible process.

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W. SINGHBHUM

5. Thermochemistry:

08 Hrs.

Standard state, standard enthalpy of formation-Hess's Law of heat summation and its applications. Heat of reaction at constant pressure and at constant volume, Enthalpy of neutralization. Bond dissociation energy and its calculation from thermochemical data, temperature dependence of enthalpy. Kirchhoff 's equation.

Books Recommended

Physical Chemistry

- 1. Pradeep's Physical Chemistry, Vol.-I, II and III
- 2. Dinesh Physical Chemistry, Vol.-I, II and III
- 3. Text Book of Physical Chemistry by Puri Sharma and Pathania
- 4. Advanced Physical Chemistry by D.N. Bajpai
- 5. UGC Advanced Physical Chemistry by J.N. Gurtu and A. Gurtu, Vol.-I, II and III
- 6. Physical Chemistry by P.C. Rakshit
- 7. Advanced Physical Chemistry by Gurdeep Raj
- 8. Physical Chemistry, by Atkins
- 9. A text book of Physical Chemistry, by Glasstone

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM

UNDERGRADUATE PROGRAMME

Chemistry

B.Sc. (Hons.)

Semester – I

Core Course (P): 1

Inorganic Chemistry (Practical)

Full Marks – 60 Time:04 Hours

1. Qualitative analysis of inorganic salts mixture containing two basic and two acid radicals with no interfering radical from the following:

$$Pb^{2+}$$
, Bi^{3+} , Sn^{2+} , Cu^{2+} , Fe^{3+} , Al^{3+} , Cr^{3+} , Co^{2+} , Zn^{2+} , Mn^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Na^{+} , K^{+} , Mg^{2+} and NH_4^{+} Acid radicals: CO_3^{2-} , SO_4^{2-} , S^{2-} , NO_3^{-} and halides.

2. Volumetric analysis:-

Estimation in a

- (a) Mixture of NaOH and Na₂CO₃
- (b) Mixture of NaHCO₃ and Na₂CO₃
- 3. Determination of Ferrous iron using standard KM_nO₄solution.

Twoexperiments:

Qualitative

$$BR - 8 + 8 + AR - (4 + 4) = 24$$

Volumetric = 16 Marks

NB and Regularity = 10 Marks

Viva-voce = 10 Marks

ACTING PRINCIPAL AUGUSTINE'S COLLEGE

MANOHARPUR, W SINGHBHUM

UNDERGRADUATE PROGRAMME

Chemistry B.Sc. (Hons.)

Semester – II

Core Course : 3 Organic Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Classification and nomenclature of organic compounds. Detection and estimation of elements, (N,S,P and halogens). Determination of molecular weight of organic acids and organic bases.

08 Hrs.

2. Structure and Bonding:

10 Hrs.

Hybridization, bond lengths and bond angles, bond energy, localized and delocalized chemical bond, van der Waals' interactions, inclusion compounds, clatherates, charge transfer complexes, resonance, hyper conjugation aromaticity, inductive and field effects, hydrogen bonding.

3. Mechanism of Organic Reactions:

12 Hrs.

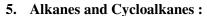
Curved arrow notation drawing electron movements with arrows, half-headed and double-headed arrow, hemolytic and heterolytic bond breaking. Types of reagents, electrophiles and nucleophiles. Types of organic reactions Energy considerations. Reactive intermediates-carbocations, carbanions, free radicals, carbenes, arynes and nitrenes (with examples). Assigning formal charges on itermediates and other ionic species. Methods of determination of reaction mechanism (product analysis intermediates, isotopic effects, kinetic and stereochemistry studies).

4. Stereochemistry of Organic Compounds:

12 Hrs.

Concept of isomerism. Types of isomerism. Optical isomerism-elements of symmetry, molecular chirality, enantiomers, stereogeniccentre, optical activity, properties of enantiomers, chiral and achiral molecules with two stereogeniccentres, diastereomers, threo and erythrodiastereomers, meso compounds, resolution of enantiomers, inversion, retention and racemization. Relative and absolute configuration, sequence rules, D & L and R & S systems of nomenclature. Geometric isomerism-determination of configuration of geometric isomers. E & Z system of nomenclature, geometric isomerisminoximes and alicyclic compounds. Conformational isomerism-conformational analysis of ethane and n-bu-tane; conformations of cyclohexane, axial and equatorial bonds. Conformation of mono substituted cyclohexane derivatives. Newman projection and Sawhorse formulae, Fischer and flying wedge formulae. Difference between configuration conformation.

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08 Hrs.

IUPAC nomenclature of branched and unbranched alkanes, the alkyl group, classification of carbon atoms in kanes, Isomerilm in alkanes, sources, methods of formation (with special reference to Wurtz reaction, Kolbe reaction, Corey-House reaction and decarboxylation of carboxylic acids), physical properties and chemical reactions of alkanes. Mechanism of free radical halogenation of alkanes: orientation, reactivity and selectivity. Cycloalkanes-nomenclauture, methods of formation, chemical reaction's Baeyer's strain theory and its limitations. Ring strain in small rings (cyclopropane and cyclobutane) theory of strainless rings. The case of cyclopropanering: banana bonds.

6. Alkenes, Cycloalkenes, Dienes and Alkynes:

10 Hrs.

Nomenclature of alkenes, method of formation, mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halides, regioselectivity in alcohol dehydration. The Saytzeff rule, Hotmann elimination, physical properties and relative stabilities of alkenes. Chemical reactions of alkenes-mechanism involved in hydrogenation, Electrophilic and free radical additions, Markownikoff's rule, hydroboration-oxiation, oxymercuration-reduction. Epoxidation, ozonolysis, hydration, hydroxytation and oxidation with KMnO₄, Polymerization of alkenes, Substitution at the allylic and vinylic positions of alkenes. Industrial applications of ethylene and propene. Methods of formation, conformation and chemical reactions of cycloalkenes. Nomenclature and classification of dienes: isolated conjugated and cumulated dienes. Structure of allenes and butadiene, methods of formation, Polymerization. Chemical reaction-1, 2 and 1, 4 additions. Diels-Alder reaction. Nomenclature, structure and bonding in alkynes. Methods of formation. Chemical reactions of alkynes. Acidity of alkynes. Mechanism of electrophilic and nucleophilic addition reactions, hydroboration-oxidation, metal-ammonia reductions, oxidation and polymerization.

Books Recommended

Organic Chemistry

- 1. Advanced Organic Chemistry by Bahl and Bahl
- 2. Pradeep's Organic Chemistry by Pradeep Publication
- 3. Dinesh Organic Chemistry
- 4. Text Book of Organic Chemistry, Vol.- I and II by I.L. Finar
- 5. Text Book of Organic Chemistry, Vol.- I and II by P.L. Soni
- 6. Reactions and Reagents by O.P. Agarwal
- 7. Reactions and Reagents by Gurdeep Raj Chatwal.
- 8. Organic Chemistry by Morrison and Boyd

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM

UNDERGRADUATE PROGRAMME

Chemistry

B.Sc. (Hons.)

Semester - II

Core Course: 4

Physical Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Solid State:

Definition of space lattice, unit cell.

Laws of crystallography -

- (i) Law of constancy of interfacial angles
- (ii) Law of rationality of indices
- (iii) Law of symmetry, symmetry elements in crystals.

X-ray diffraction by crystals. Derivation of Bragg equation.

Determination of crystal structure of NaCl, KCl, and CsCl (Laue's method and powder method).

2. Colloidal State: 08 Hrs.

Definition of colloids, classification of colloids, solids in liquids (sols): Properties-kinetic, optical and electrical, stability of colloids, protective action Hardy-Schulze law, gold number. Liquids in liquids (emulsion): types of emulsions, preparation. Emulsifier, liquid in solids (gels): classification, preparation and properties, inhibition, general applications of colloids.

3. Chemical kinetics and Catalysis:

10 Hrs.

Chemical kinetics and its scope, rate of a reaction, factors influencing the rate of a reaction-concentration, temperature, pressure, solvent, light, catalyst. Concentration dependence of rates, mathematical characteristics of simple chemical reactions-zero order, first order, second order, pseudo order, half-life and mean life. Determination of the order of reaction – differential method, method of integration, method of half-life period and isolation method.Radioactive decay as a first order phenomenon. Experimental method of chemical kinetics :conductometric, potentiometric, optical methods, polarimetry and spectrophotometer. Theories of chemical kinetics : effect of temperature on rate of reaction, Arrhenius equation, concept of activation energy, Simple collision theory based on hard sphere model, transition state theory (equilibrium hypothesis). Expression for the rate constant based on equilibrium constant and thermodynamic aspects.

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W. SINGHBHUM 4. Catalysis:

05 Hrs

Type of catalyst and catalysis, Homogeneous and heterogeneous catalysis, enzyme catalysis, Theory of catalysis, characteristics of catalysed reactions, action of catalytic promoters and in hibitors, miscellaneous examples.

5. Chemical Equilibrium :

05 Hrs.

Equilibrium constant and free energy. Thermodynamic derivation of law of mass action. Le Chatelier's principle. Reaction isotherm and reaction Isochore-Clapeyron equation and Clausius-Clapeyron equation, applications.

Books Recommended

Physical Chemistry

- 1. Pradeep's Physical Chemistry, Vol.-I, II and III
- 2. Dinesh Physical Chemistry, Vol.-I, II and III
- 3. Text Book of Physical Chemistry by Puri Sharma and Pathania
- 4. Advanced Physical Chemistry by D.N. Bajpai
- 5. UGC Advanced Physical Chemistry by J.N. Gurtu and A. Gurtu, Vol.-I, II and III
- 6. Physical Chemistry by P.C. Rakshit
- 7. Advanced Physical Chemistry by Gurdeep Raj
- 8. Physical Chemistry, by Atkins
- 9. A Text Book of Physical Chemistry, by Glasstone

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM

Chemistry

B.Sc. (Hons.)

Semester – II

Core Course (P): 2

Physical Chemistry (Practical)

Full Marks – 60 Time :04 Hours

- 1. Determination of surface tension of liquids by stalagmometer.
- 2. Determination of Co-efficient of viscosity using ostwald's viscometer.
- 3. Determination of rate constant for the bydrolysis of ester catalyzed by hydrogen ion at room temperature.
- 4. Study of the effect of concentration on surface tension of acetic acid and sodium chloride solutions.
- 5. Determination of percentage composition of a mixture of two liquids by viscosity measurement.

Experiment = 40 Marks

Notebook and Regularity = 10 Marks

Viva-voce = 10 Marks

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIJR, W SINGHBHUM

UNDERGRADUATE PROGRAMME

Chemistry

B.Sc. (Hons.)

Semester - III

Core Course: 5

Inorganic Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Oxidation and reduction:

8 Hrs.

Use of redox potential data-analysis of redox cycle, redox stability in water-frost, Latimer and Pourbaix diagrams, Principles involved in the extraction of the elements.

2. Chemistry of Elements of First Transition Series:

10 Hrs.

Characteristic properties of d-block elements. Properties of the elements of the first transition series, their binary compounds and complexes illustrating relative stability of their oxidation states, coordination number and geometry.

3. Chemistry of Elements of Second and Third Transition Series:

10 Hrs.

General characteristics, comparative treatment with respect to ionic radii, oxidation states, magnetic behaviour, spectral properties and stereochemistry.

4. Chemistry of Lanthanide Elements:

6 Hrs.

Electronic configurations, oxidation states, atomic and ionic radii and lanthanide contraction, complex formation, occurrence and isolation, compounds of lanthanide elements.

5. Chemistry of Actinides:

4 Hrs.

General features and Chemistry of actinides, chemistry of separation of Np, Pu and Am from U, similarities between the later actinides and the later lanthanides.

6. Co-ordination compounds:

10 Hrs.

Werner's co-ordination theory and its experimental verification, effective atomic number concept, ligands, chelates, nomenclature of co-ordination compounds, isomerism in co-ordination compounds, valence bond theory of transition metal complexes.

Books Recommended

Inorganic Chemistry

- 1. Pradeep's Inorganic Chemistry, Vol.- I, II and III
- 2. Dinesh Inorganic Chemistry, Vol.- I, II and III
- 3. Text Book of Inorganic Chemistry by P.L. Soni
- 4. Selected Topics in Inorganic by Satyaprakash, Malik, Madan and Tuli
- 5. Advanced Inorganic Chemistry by Gurdeep and Harish
- 6. Advanced Inorganic Chemistry by Cotton and Wilkinsons
- 7. Principles of Inorganic Chemistry by Puri, Sharma and Kalia
- 8. Inorganic Chemistry, by Moiller

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MANOHARPUR, W SINGHBHUM

UNDERGRADUATE PROGRAMME

Chemistry

B.Sc. (Hons.)

Semester – III

Core Course: 6

Organic Chemistry

Full Marks – 70 Time:03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Arenes and Aromaticity:

8 Hrs.

Nomenclature of benzene derivatives. The aryl group Aromatic nucleus and side chain. Structure of benzene: molecular formula and Kekule structure. Stability and carbon-carbon bond lengths of benzene, resonance structure. MO picture.

Aromaticity: the Huckel rule, aromatic ions. Aromatic electrophilic substitution-general pattern of the mechanism, role of σ and π complexes. Hechanism of nitration, halogenation, sulphonation, mercuration and Friedel-Crafts reaction. Energy profile diagrams. Activating and deactivating substituents, orientation and ortho/para ratio, side chain reactions of benzene derivatives. Birch reduction Methods of formation and chemical reactions of alkylbenzenes, alkynyl benzenes and biphenyl.

2. Alkyl and ArylHalides:

5 Hrs.

Nomenclature and classes of alkyl halides, methods of formation, chemical reactions. Mechanisms of nucleophilic substitution reactions of alkyl halides, S_N2 and S_N1 reactions with energy profile diagrams. Polyhalogencompound: chloroform, carbon tetrachioride, method of formation of aryl halides, nuclear and side chain reactions. The addition-elimination and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions. Relative reactivities of alkyl halides, vsallyl, vinyl and aryl halides, synthesis and uses of DDT and BHC.

3. Alcohols: 5 Hrs.

Classification and nomenclature.

Monohydric alcohols-nomencalture, method of formation by reduction of aldehydes ketones, carboxylic acids and esters. Hydrogen bonding. Acidic nature Reactions of alcohols. Dihydric alcolos-nomenclature, methods of formation chemical reactions of vicinal glycols, oxidative cleavage [Pb(OAc)₄ and H10₄] and pinacolpinacolone rearrangement. Trihydric alcohols-nomenclature and methods of formation, chemical reactions of glycerol.

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4. Phenols: 6 Hrs.

Nomenclature, structure and bonding.Preparation of phenols, physical properties and acidic character.Comparative aciaic strengths of alcohols and phenols, resonance stablilization of phenoxide ion.Reactions of phenols-electrophilic aromatic substitution, acylation and carboxylation.Machanisms of Fries rearrangement, Ciaisen rearrangement, Gattermansysnthesis, Hauben-Hoesch reaction, Lederer-Manasse reaction and Reimer-Tiemann reaction.

5. Ethers and Epoxides:

3 Hrs.

Nomenclature of ethers and methods of their formation, physical properties Chemical reaction-cleavage and auto-oxidation, Ziesel's method. Synthesis of epoxides. Acid and base-catalyzed ring opening of expoxides, orientation of epoxide ring-opening Reactions of Grignard and organolithium reagents with epoxides.

6. Aldehydes and Ketones:

14 Hrs.

Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides, synthesis of aldehydes and ketones using 1, 3-dithianes, synthesis of ketones from nitriles and from carboxylic acids. Physical properties, Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condensations, Condensation with ammonia and its derivatives, Witting reaction. Mannich reaction.

Use of acetals as protecting group. Oxidation of aldehydes, Baeyer-Villiger oxidation of ketones. Cannizzaro reaction, MPV, Clemmensen, Wolff-Kishner, LiAlH₄ and NaBH₄ reductions, Halogenation of enolizable ketones. An introduction to α , β unsaturated aldehydes and ketones.

Books Recommended

Organic Chemistry

- 1. Advanced Organic Chemistry by Bahl and Bahl
- 2. Pradeep's Organic Chemistry by Pradeep Publication
- 3. Dinesh Organic Chemistry
- 4. Text Book of Organic Chemistry, Vol.- I and II by I.L. Finar
- 5. Text Book of Organic Chemistry, Vol.- I and II by P.L. Soni
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- 7. Reactions and Reagents by Gurdeep Raj Chatwal.
- 8. Organic Chemistry by Morrison and Boyd

Chemistry

B.Sc. (Hons.)

Semester - III

Core Course: 7

Physical Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Thermodynamics II:

12 Hrs.

Second law of thermodynamics', need for the law, different statements of the law. Carnot cycle and its efficiency, Carnot theorem. Thermodynamic scale of temperature. Concept of entropy, entropy as a state function, entropy as a function of V & T, entropy as a function of P & T, entropy change in physical change, Clausius inequality, entropy as a criteria of spontaneity and equilibrium, Entropy change in ideal gases and mixing of gasses. Third law of thermodynamics: Nernst heat theorem, statement and concept of residual entropy, evaluation of absolute entropy from heat capacity data, Gibbs and Helmholtz functions, Gibbs functions (G) and Helmholtz function (A) as thermodynamic quantities, A &G as criteria for thermodynamic equalibrium and spontaneity, their advantage over entropy change. Variation of G and A with P, V and T.

2. Phase Equilibrium:

10 Hrs.

Statement and meaning of the terms-phase, component and degree of freedom, derivation of Gibbs phase rule, phase equilibria of one component system-water, CO₂ and S systems. Phase equilibria of two component system-solid-liquid equilibria, simple eutectic – Bi-Cd, Pb-Ag systems, desilverisation of lead. Solid solutions-compound formation with congruent melting point (Mg-Zn) and incongruent melting point, (NaCl-H₂O) FeCl₃-H₂O and CUSO₄-H₂O system.Freezing mixtures, acetone-dry ice. Liquid-liquid mixtures-ideal liquid mixtures, Raoult's and Henry's law, Non-ideal system-azeotropes – HCl-H₂O and ethanol-water systems. Partially miscible liquids-Phenol-water, trimethyl amine-water, nicotine-water systems. Lower and upper consolute temperature.Effect of impurity on con-solute temperature.Immiscible liquids, steam distillation.Nernst distribution law-thermodynamic derivation, applications.

3. Physical Properties & Molecular Structure I

10 Hrs.

Parachor, refractive index & Molecular refractivity, Dipole moment, magnetic properties and Magnetic Susceptibility, Additive & Constitutive Properties and their uses in elucidation of molecular structure.

4. Physical Properties & Molecular Structure II

05 Hrs.

Optical activity, polarization – (Clausius-Mossotti equation), orientation of dipoles in an electric field, dipole moment, induced dipole moment, measurement of dipole moment-temperature method and refractivity method, dipole moment and structure of molecules, magnetic properties-paramagnetism, diamagnetism and ferromagnetism.

Books Recommended

Physical Chemistry

- 1. Pradeep's Physical Chemistry, Vol.-I, II and III
- 2. Dinesh Physical Chemistry, Vol.-I, II and III
- 3. Text Book of Physical Chemistry by Puri Sharma and Pathania
- 4. Advanced Physical Chemistry by D.N. Bajpai
- 5. UGC Advanced Physical Chemistry by J.N. Gurtu and A. Gurtu, Vol.-I, II and III
- 6. Physical Chemistry by P.C. Rakshit
- 7. Advanced Physical Chemistry by Gurdeep Raj
- 8. Physical Chemistry, by Atkins
- 9. A text book of Physical Chemistry, by Glasstone

Chemistry

B.Sc. (Hons.)

Semester - III

Core Course (P): 3

Organic Chemistry (Practical)

Full Marks – 90 Time :06 Hours

- 1. Detection of element [N, S, P and halogens] and detection of functional group in organic compounds containing one functional group including monosaccharides.
 - COOH, Phenolic OH, Aldehydic, Ketonic, Nitro, Amino and amides.
- 2. Organic preparations:
 - (i) Aspirin from salicylic acid.
 - (ii) P-methylacetanilide from p-toluidine.
 - (iii) Acetanilide from aniline.
 - (iv) Preparation of Benzanilide from aniline.
 - (v) Preparation of Benzoic acid from benzaldehyde.

Two Experiments:

Qualitative = 30 Marks

Preparation = 30 Marks

Notebook and Regularity = 15 Marks

Viva-voce = 15 Marks

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Chemistry

B.Sc. (Hons.)

Semester – IV

Core Course: 8

Inorganic Chemistry

Full Marks – 70 Time:03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Acids and Bases: 06 Hrs.

Arrhenius, Bronsted-Lowry, the Lux-Flood, solvent systems and Lewis concepts of acids and bases. Relative strength of acids, trends in acid strength, strength of oxo-acid.

2. Non-aqueous Solvents:

06 Hrs.

Physical properties of a solvent, types of solvents and their general characteristics, reactions in non-aqueous solvents with reference to liquid NH₃ and liquid SO₂.

3. Hard and Soft Acids and Bases (HSAB):

07 Hrs.

Classification of acids and bases as hard and soft.Pearson's HSAB concept, acid-base strength and hardness and softness.Symbiosis, theoretical basis of hardness and softness, electronegativity and hardness and softness.

4. Metal-ligand Bonding in Transition Metal Complexes:

10 Hrs.

Limitations of valence bond theory and elementary idea of crystal-field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, factors affecting the crystal-field parameters.

Books Recommended

Inorganic Chemistry

- 1. Pradeep's Inorganic Chemistry, Vol.- I, II and III
- 2. Dinesh Inorganic Chemistry, Vol.- I, II and III
- 3. Text Book of Inorganic Chemistry by P.L. Soni
- 4. Selected Topics in Inorganic by Satyaprakash, Malik, Madan and Tuli
- 5. Advanced Inorganic Chemistry by Gurdeep and Harish
- 6. Advanced Inorganic Chemistry by Cotton and Wilkinsons
- 7. Principles of Inorganic Chemistry by Puri, Sharma and Kalia
- 8. Inorganic Chemistry, by Moiller

Chemistry

B.Sc. (Hons.)

Semester – IV

Core Course: 9

Organic Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 20$

1. Carboxylic Acids:

06 Hrs.

Nomenclature, structure and bonding, physical properties, acidity of carboxylic acids, effects of substituents on acid strength. Preparation of carboxylic acids. Reactions of carboxylic acids. Hell Vol Hard-Zelinsky reaction. Synthesis of acid chlorides, esters and amides. Reduction of carboxylic acids. Mechanism of decarboxylation. Methods of formation and chemical reactions of halo acids. Hydroxyacids: malic, tartaric and citric acids. Methods of formation and chemical reactions of unsaturated mono-carboxylic acids. Dicarboxylic acids: methods of formation and effect of heat and dehydrating agents.

2. Carboxylic Acid Derivatives:

03 Hrs.

Structure and nomenclature of acid chlorides, esters, amides (urea) and acid anhydrides. Relative stability of acyl derivatives. Physical properties, interconversion of acid derivatives by nucleophilic acyl substitution. Preparation of carboxylic acid derivatives, chemical reaction. Mechanisms of esterification and hydrolysis (Acidic and Basic)

3. Organic Compounds of Nitrogen:

12 Hrs.

Preparation nitroalkanes and nitroarenes. Chemical reactions of nitroalkanes. Mechanisms of nucleophilic substitution in nitroarenes and their reductions in acidic neutral and alkaline media. Picric acid. Halonitroarenes : reactivity. Structure and nomenclature of amines, physical properties. Stereochemistry of amines. Separation of mistrue of primary, secondary and tertiary amines. Structural features effecting basicity of amines. Amine salts as phase-transfer catalysts, preparation of alkyl and aryl amines (reduction of nitro compounds, nitriles) reductive amination of aldehydic and ketonic compounds. Gabriel-phthalimide reaction, Hofmann bromamide reaction. Reactions of amines, electrophilic aromatic substitution in aryl amines, reactions of amines with nitrous acid. Synthetic transformations of aryl diazonium salts, azo coupling.

10 Hrs.

4. Electromagnetic Spectrum: Absorption Spectra

Ultraviolet (UV) absorption spectroscopy-absorption laws (Beer-Lambert's law), molar absorptivity, presentation and analysis of UV spectra, types of electronic transitions, effect of conjugation. Concept of chromophore and auxochrome. Bathochromic, hypsochromichyperchromic and hypochromic shifts. UV spectra of conjugatedienes and enones, infrared (IR) absorption spectroscopy-molecular vibrations, Hooke's law, selection rules, intensity and position of IR bands, measurement of IR spectrum, fingerprint region characteristic absorptions of various functional groups and interpretation of IR spectra of simple organic compounds.

Books Recommended

Organic Chemistry

- Advanced Organic Chemistry by Bahl and Bahl
- Pradeep's Organic Chemistry by Pradeep Publication
- **Dinesh Organic Chemistry**
- Text Book of Organic Chemistry, Vol.- I and II by I.L. Finar
- Text Book of Organic Chemistry, Vol.- I and II by P.L. Soni
- Reactions and Reagents by O.P. Agarwal
- Reactions and Reagents by Gurdeep Raj Chatwal.
- Organic Chemistry by Morrison and Boyd

ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM

Chemistry

B.Sc. (Hons.)

Semester – IV

Core Course: 10

Physical Chemistry

Full Marks – 70 Time:03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Electrochemistry I:

12 Hrs.

Electrical transport-conduction in metals and in electrolyte solution, specific conductance and equivalent conductance, measurement of equivalent conductance, variation of equivalent and specific conductance with dilution.

Migration of ions and Kohlrausch law, Arrhenius theory of electrolytic dissociation and its limitations, weak and strong electrolytes, Ostwald's dilution law its uses and limitation. Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only). Transport number, definition and determination by Hittorf method and moving boundary method. Applications of conductivity measurements: determination of degree of dissociation, determination of Ka of acids, determination of solubility product of a sparingly soluble salt, conductometric titrations.

2. Electrochemistry II:

10 Hrs.

Types of reversible electrodes-gas-metal ion, metal-metal ion, metal-insoluble salt-anion and redox electrodes. Electrode reaction. Nernst equation, derivation of cell E.M.F. and single electrode potential, standard hydrogen electrode-reference electrodes-standard electrode potential, sign conventions, electrochemical series and its significance. Electrolytic and Galvanic cells-reversible and irreversible cells, conventional representation of electrochemical cells, EMF of a cell and its measurements. Computation of cell EMF. Calculation of thermodynamic quantities of cell reactions (ΔG, ΔH and K), polarization, over potential and hydrogen overvoltage. Concentration cell with and without transport, liquid junction potential, application of concentration cell, valency of ions, solubility product and activity coefficient, potentiometric titrations. Definition of pH and pKa, determination of pH using hydrogen, quinhydrone and glass electrodes by potentiometric methods. Buffers-mechanism of buffer action, Henderson-Hazel equation. Hydrolysis of salts, Corrosin-types, theories and methods of combating it.

3. Surface Chemistry:

10 Hrs.

Difference between absorption and adsorption. Adsorbate and adsorbent, types of adsorption, elementary idea and Gibb's adsorption equation, free energy, isotherms, Fruendlich and Langmuir' adsorption isotherms, qualitative treatment of BET isotherm and its application to surface area measurement, application of adsorption.

Books Recommended

Physical Chemistry

- 1. Pradeep's Physical Chemistry, Vol.-I, II and III
- 2. Dinesh Physical Chemistry, Vol.-I, II and III
- 3. Text Book of Physical Chemistry by Puri Sharma and Pathania
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- 5. UGC Advanced Physical Chemistry by J.N. Gurtu and A. Gurtu, Vol.-I, II and III
- 6. Physical Chemistry by P.C. Rakshit
- 7. Advanced Physical Chemistry by Gurdeep Raj
- 8. Physical Chemistry, by Atkins
- 9. A text book of Physical Chemistry, by Glasstone

Chemistry

B.Sc. (Hons.)

Semester - IV

Core Course (P): 4

Inorganic Chemistry (Practical)

Full Marks – 90 Time :06 Hours

1. Qualitative analysis of mixtures of inorganic salts containing six radicals including one interfering radical from among those given below:

Basic radicals : Ag⁺, Pb²⁺, Bi³⁺, Sb²⁺, Sn²⁺, Cu²⁺, Fe²⁺, Fe³⁺, Al³⁺, Cr³⁺, Co²⁺, Ni²⁺, Zn²⁺, Mn²⁺, Ca²⁺, Ba²⁺, Sr²⁺, Na⁺, K⁺, Mg²⁺, NH₄⁺

Acid radicals: Acetate, Borate, Oxalate, Phosphate, CO_3^{2-} , SO_4^{2-} , S^{2-} , NO_3^{-} , halides.

- 2. (a) Determination of Ferrous iron using standard K₂Cr₂O₇ solution.
 - (b) Estimation of copper in the given solution using standard sodium thiosulphate solution.

Two Experiments:

Qualitative - 40

BR - 8 + 8 + 8 Marks

AR - 4 + 4 + 8 Marks (Interfering)

Volumetric - 20 Marks

Notebook and Regularity - 15 Marks

Viva-voce – 15 Marks

Chemistry

B.Sc. (Hons.)

Semester – V

Core Course: 11

Organic Chemistry

Full Marks – 70 Time:03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Spectroscopy:

Nuclear magnetic resonance (NMR) spectroscopy. Proton magnetic resonance (1HNMR) spectroscopy, nuclear shielding and deshielding, chemical shift and molecular structure; spin-spin splitting and coupling constants, areas of signals, interpretation of PMR spectra of simple organic molecules such as ethyl bromide, ethanol, acetaldehyde, 1, 1-2 tribromoethane, ethyl acetate, toluence and acetophenone. Problems pertaining to the structure elucidation of simple organic compounds using UV, IR and PMR spectroscopic techniques.

2. Organometallic Compounds:

04 Hrs.

Organomagnesium compounds: the Grignard reagents-formation, structure and chemical reaction. Organozine compounds: formation and chemical reactions. Organolithium compounds: formation and chemical reactions.

3. OrganoSulphurCompounds:

04 Hrs.

Nomenclature, structural features, methods of formation and chemical reaction of thiols, thioethers, sulphonic acids, sulphonamides and sulphaguanidine.

4. HetrocyclicCompounds:

08 Hrs.

Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine. Methods of synthesis and chemical reaction with particular emphasis on the mechanism of electrophilic substitution.

Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole. Introduction to condensed, five and six-membered heterocyles. Preparation and reaction of indole, quinolone and isoquinoline with special reference to Fischer indole, quinoline synthesis, Skraup synthesis and Bischler-Napieralski synthesis. Mechanism of electrophilic substitution reactions of indole and isoquinoline.

5. Organic Synthesis via Enolates:

06 Hrs.

Acidity of α hydrogens, alkylation of diethyl molanate and ethyl acetoacetate. Synthesis of ethyl acetoacetate : the Claifen condensation. Keto-enoltautomerism of ethyl acetoacetate, Alkylation of 1,3-dithianes, alkylation and acylation of enamines.

Books Recommended

Organic Chemistry

- 1. Advanced Organic Chemistry by Bahl and Bahl
- 2. Pradeep's Organic Chemistry by Pradeep Publication
- 3. Dinesh Organic Chemistry
- 4. Text Book of Organic Chemistry, Vol.- I and II by I.L. Finar
- 5. Text Book of Organic Chemistry, Vol.- I and II by P.L. Soni
- 6. Reactions and Reagents by O.P. Agarwal
- 7. Reactions and Reagents by Gurdeep Raj Chatwal.
- 8. Organic Chemistry by Morrison and Boyd

Chemistry

B.Sc. (Hons.)

Semester – V

Core Course: 12

Physical Chemistry

Full Marks – 70 Time:03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Photochemistry:

Interaction of radiation with matter.Difference between photochemical reactions and thermochemical reactions. Laws governing absorption of light :Lambort's law and Beer's law. Molar extinction co-efficient and optical density. Laws of photochemistry :Grothus-Draper law, Stark Einstein law Quantum yield. Low and high quantum yield. Experimental determination of quantum yield of a photochemical reaction. Some photochemical reactions : photolysis of HI, photochemical reactions between H₂ and Br₂ and H₂ and Cl₂. Joblonski diagram depicting various processes occurring in the excited state. Quenching of fluorescence, Qualitative description of fluorescence, phosphorescence, non-radioactive processes (internal conversion, intersystem crossing), photosensitization, photosensitized reactions – energy transfer processes (simple examples), photochemical equilibrium.

2. Solutions, Dilute Solutions and Colligative Properties:

07 Hrs.

Ideal and non-ideal solutions, methods of expressing concentrations of solutions, activity and activity coefficient. Dilute solution, colligative properties, Raoult's law, relative lowering of vapour pressure, molecular weight determination. Osmosis, law of osmotic pressure and its measurement, determination of molecular weight from osmotic pressure. Elevation of boiling point and depression of freezing point. Thermodynamic derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods for determining various colligative properties. Abnormal molar mass, degree of dissociation and association of solutes.

3. Elementary quantum mechanics:

20 Hrs.

Black-body radiation, Planck's radiation law, photoelectric effect. Heat capacity of solids, Bohr's model of hydrogen atom (no derivation) and its defect, Compton effect. De Broglie hypothesis, the Heisenbeg's uncertainty principle, Sinusoidal wave equation, Hamiltonian operator, Schrodinger wave equation and its importance, physical interpretation of the wave function, postulates of quantum mechanics, particle in a one

dimensional box. Schrodinger wave equation for H-atom, separation into three equations (without derivation), quantum numbers and their importance, hydrogen like wave functions, radial wave functions, angular wave function. Molecular orbital theory, basic ideas-criteria for forming M.O from A.O. construction of M.O's by LCAO H_2^+ ion, calculation of energylevels from wave functions, physical picture of bonding and anti-bonding wave functions, concepts of – sp, sp² sp³, calculation of coefficients of A.O's used in these hybrid orbitals. Introduction to valence bond model of H_2 , comparison of M.O. and V.B. models.

Books Recommended

Physical Chemistry

- 1. Pradeep's Physical Chemistry, Vol.-I, II and III
- 2. Dinesh Physical Chemistry, Vol.-I, II and III
- 3. Text Book of Physical Chemistry by Puri Sharma and Pathania
- 4. Advanced Physical Chemistry by D.N. Bajpai
- 5. UGC Advanced Physical Chemistry by J.N. Gurtu and A. Gurtu, Vol.-I, II and III
- 6. Physical Chemistry by P.C. Rakshit
- 7. Advanced Physical Chemistry by Gurdeep Raj
- 8. Physical Chemistry, by Atkins
- 9. A text book of Physical Chemistry, by Glasstone

Chemistry

B.Sc. (Hons.)

Semester - V

DSE 1

Bio-Inorganic Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Essential and trace elementsin biological processes :metals like Fe, Cu, Se, Cr and Mo. Essential and trace non-metals : like P (in the form of Phosphate), Iodine and Chlorine.

2. Essential Bulk Elements:

Na and K, Ca and Mg in the form of Na $^+$ / K $^+$ and Ca $^{2+}$ / Mg $^{2+}$. Biological roles of alkali and alkaline earth metal ions

- 3. Metallomorphyrins
- **4.** Transport and Storage of Dioxygen :Hemeproteins and oxygen uptake, Haemoglobin and myoglobin functions and co-operativity, structures of haemoglobin and myoglobin. Role of hemoglobin and myoglobin. Oxidation and oxygenation of Hb and Mb.
- **5.** Nitrogenase: Biological Nitrogen fixation.
- **6.** Metals in medicines, Metal deficiency and diseases, Toxic effects of metals.

Book Recommended

Bio-Inorganic Chemistry

- 1. Bio Inorganic Chemistry by K. Hussain Reddy
- 2. General Chemistry by R.C. Sarkar
- 3. Bio Inorganic Chemistry by Kalsi

Chemistry

B.Sc. (Hons.)

Semester – V

DSE 2

Bio-Organic Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Enzymes:

Introduction and historical perspective Chemical and Biological Catalysis. Nomenelature, classification and extraction of Enzymes, Enzyme inhibition – Reversible and irreversible.

2. Mechanism of enzyme action:

Examples of some typical enzyme mechanism

- (a) Transition State theory
- (b) Acid-base Catalysis
- (c) Covalent Catalysis

3. Bio-technological application of enzymes:

Use of enzymes in feed and drink industries

4. Clinical uses of enzymes:

- (a) Mutations and genetic diseases.
- (b) Enzyme therapy and recombinant DNA technology.

5. Co-enzymes:

Structure and biological function of co-enzyme A, co-factors as derived from vitamins, vitamin-B12.

Book Recommended

Bio-Organic Chemistry

1. Bio-Organic and Inorganic Chemistry by P.S. Kalsi

Chemistry B.Sc. (Hons.)

Semester-V

Core Course (P): 5

Organic Chemistry (Practical)

Full Marks – 60 Time :06 Hours

- 1. Identification of monofunctional organic compounds and monosaceharides. -COOH, -OH, -CHO, -C=O, Ester, -NO₂, -NH₂, Anilide, Hydrocarbons and unsaturation.
- 2. Preparation of the following organic compounds.
 - (a) Preparation of Picrate derivative from anthracene. .
 - (b) P-nitro acetanilide from acetanilide.
 - (c) Preparation of semicarbazone derivative from acetophenone.
 - (d) Preparation of m-dinitrobenzene from nitrobenzene.

Two Experiments:

Detection = 25

Preparation = 15

Notebook and Regularity - 10 Marks

Viva-voce - 10 Marks

Chemistry B.Sc. (Hons.)

Semester - V

DSE (P): 1

Physical Chemistry (Practical)

Full Marks – 60 Time :04 Hours

- 1. Determination of molecular weight of volatile liquid by victor Meyer's method.
- 2. Determination of Heat of neutralization of
 - (a) Strong acid and Strong base.
 - (b) Weak acid and Strong base.
- 3. Determination of partition co-efficient of solute between two immiscible liquids.
 - (a) Iodine between carbon tetrachloride and water.
 - (b) Benzoic acid between benzene and water.
- 4. Determination of water equivalent of calorimeter.
- 5. Determination of refractive index of liquids by Abbe's refractometer and calculation of molecular refractivity of solute.

Experiment – 40 Marks Notebook and Regularity – 10 Marks Viva-voce – 10 Marks

ACTING PRINCIPAL

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Chemistry

B.Sc. (Hons.)

Semester - VI

Core Course - 13

Inorganic Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Magnetic Properties of Transition Metal Complexes:

07 Hrs.

Types of magnetic behaviour, methods of determining magnetic susceptibility, spin-only formula, L-S coupling, correlation of m_e and m_{eff} values, orbital contribution to magnetic moments, application of magnetic moment data for 3d-metal complexes.

2. Electronic Spectra of Transition Metal Complexes:

07 Hrs.

Type of electronic transitions, selection rules for d-d transitions, spectroscopic ground states, spectro chemical series. Orgel energy level diagram for d^1 and d^9 states, discussion of the electronic spectrum of $[Ti(H_2O)_6]^{3+}$ complexion.

3. Thermodynamic and Kinetic Aspects of Metal Complexes:

05 Hrs.

A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, substitution reactions of square planar complexes.

4. Organometallic Chemistry:

10 Hrs.

Definition, nomenclature and classification of organometallic compounds. Preparation, properties, bonding and applications of alkyls of Li, Al, Hg, Sn and Ti, a brief account of metal-ethylenic complexes and homogeneous hydrogenation, mononuclear carbonyls and the nature of bonding in metal carbonyls.

5. Silicones and Phosphazenes:

04 Hrs.

Silicones and phosphazenes as examples of inorganic polymers, nature of bonding in triphosphazenes.

Books Recommended

Inorganic Chemistry

- 1. Pradeep's Inorganic Chemistry, Vol.- I, II and III
- 2. Dinesh Inorganic Chemistry, Vol.- I, II and III
- 3. Text Book of Inorganic Chemistry by P.L. Soni
- 4. Selected Topics in Inorganic by Satyaprakash, Malik, Madan and Tuli
- 5. Advanced Inorganic Chemistry by Gurdeep and Harish
- 6. Advanced Inorganic Chemistry by Cotton and Wilkinsons
- 7. Principles of Inorganic Chemistry by Puri, Sharma and Kalia
- 8. Inorganic Chemistry, by Moiller

Chemistry

B.Sc. (Hons.)

Semester - VI

Core Course - 14

Organic Chemistry

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B : Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Carbohydrates: 07 Hrs.

Classification and nomenclature. Monosacharides, mechanism of osazone formation, interconversion of glucose and fructose, chainlenghtening and chain shortening of aldoses. Configuration of monosaccharides. Erythro and threodiastereomers. Conversion of glucose into mannose. Formation of glycosides, ethers and esters. Determination of ring size of monosaccharides. Cyclic structure of D(+) – glucose, mechanism of mutarotation. Structures of ribose and deoxyribose. An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.

2. Amino Acids, Peptides, Proteins and Nucleic Acids:

06 Hrs.

Classification, structure and stereochemistry of amino acids. Acid basebahaviour, isoelectric point and electrophoresis. Preparation and reaction of amino acids. Structure and nomenclature of peptides and proteins. Classification of proteins. Peptide structure determination, end group analysis, selective hydrolysis of peptides Classical peptide synthesis, solid phase peptide synthesis. Structures of peptides and proteins. Levels of protein structure. Protein denaturation/renaturation. Nucleic acids: introduction. Constituents of nucleic acids. Ribonucleosides and ribonucleotides, the double helical structure of DNA.

3. Synthetic Polymers:

04 Hrs.

Addition of chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers. Condensation or step growth polymerization, polyesters, polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy resins and polyurethanes – Natural and synthetic rubbers.

4. Synthetic Dyes:

08 Hrs.

Colour and constitution (electronic concept). Classification of dyes. Chemistry and synthesis of Methyl orange. Congo red, Malachitegreen, Crystal violet, Phenolphthalein, Fluorescein, Alizarin and Indigo.

5. Some Important Reagents and their Applications in Organic reactions :

05 Hrs.

Anhydrous aluminium chloride, Boron trifluoride, Lead tetra acetate, Lithium aluminium hydride, Periodic acid, N-BromoSuccinamide (NBS), Sodamide, Sodium Borohydride, Selenium dioxide, Phosphorus penta chloride, Phosphorus pentoxide, Zinc chloride, Nitrous acid, Hydrogen cyanide, Phenyl hydrazine, sodium ethoxide.

Books Recommended

Organic Chemistry

- 1. Advanced Organic Chemistry by Bahl and Bahl
- 2. Pradeep's Organic Chemistry by Pradeep Publication
- 3. Dinesh Organic Chemistry
- 4. Text Book of Organic Chemistry, Vol.- I and II by I.L. Finar
- 5. Text Book of Organic Chemistry, Vol.- I and II by P.L. Soni
- 6. Reactions and Reagents by O.P. Agarwal
- 7. Reactions and Reagents by Gurdeep Raj Chatwal.
- 8. Organic Chemistry by Morrison and Boyd

Chemistry

B.Sc. (Hons.)

Semester - VI

DSE 3

Spectroscopy (Physical Chemistry)

Full Marks – 70 Time :03 Hours

Group - A :(Compulsory) 10 objective type questions (MCQ/True-False/Fill in the Blanks etc.) of 2 marks each. $2 \times 10 = 20$

Group – B: Short answer type questions. Eight questions are to be set out of which 4 are to be answered, carrying 5 marks each. $5 \times 4 = 20$

Group – C: Long type question: Four questions are to be set out of which two questions are to be answered each question will carry 15 marks. $15 \times 2 = 30$

1. Spectroscopy: 07 Hrs.

Introduction: Electromagnetic radiation, regions of the spectrum-basic features of different spectrometers, statement of the Born-Oppenheimer approximation, degrees of freedom.

Rotational Spectrum: Diatomic moleculars. Energy levels of a rigid rotor (semi-classical principles), selection rules, spectral intensity, distribution using population distribution (Maxwell-Boltzmann distribution) determination of bond length, qualitative description of non-rigid rotor, isotope effect.

Vibrational Spectrum : Infrared spectrum: Energy levels of simple harmonic oscillator, selection rules: pure vibrational spectrum, intensity, determination of force constant and qualitative relation of force constant and bond energies, effect of anharmonic motion and isotope on the spectrum, idea of vibrational frequencies of different functional groups.

Raman Spectrum:

Introduction: Concepts of Polarizability, quantum theory of Raman effect. Theory of Raman spectra (stokes and antistoke's lines). Instrumentation, condition for Raman spectroscopy, equivalence of Beer, Lambert law of absorption of Raman scattering, characteristics Parameters of Raman lines, pure rotational and pure vibrational Raman spectra of diatomic molecules, selection rule. Comparison between IR and Raman spectra, applications.

Electronic Spectrum: Concept of potential energy curves for bonding and anti-bonding molecular orbitals, qualitative description of selection rules and Franck-Condon principle.

Qualitative description of σ , π and n M.O, their energy levels and the respective transitions.

2. Nuclear magnetic resonance spectroscopy:

Principle of Nuclear Magnetic resonance.NMR technique, Interpretation of the NMR spectra (NMR spectra and Molecular structure) chemical shift. Shielding and Desheilding of protons, Nuclear spin interactions. Applications of NMR spectra.

Books Recommended

Spectroscopy

- 1. Atomic and molecular Spectroscopy by M. Gupta
- 2. Organic Spectroscopy by R.L. Sharma
- 3. Group Theory and symmetry in Chemistry by B.K. Sharma
- 4. Spectroscopy by Gurdeep Raj

Chemistry

B.Sc. (Hons.)

Semester - VI

Core Course (P):6

Inorganic Chemistry (Practical)

Full Marks – 60 Time :06 Hours

- 1. Gravimetric estimation of Ag⁺, Ni²⁺, Cl⁻, SO₄²⁻.
- 2. (a) preparation of sodium nitropruside.
 - (b) Preparation of Patsh Alum
 - (c) Preparation of chrome alum.
- 3. Determination of zinc perlitre in the given solution using standard EDTA solution.

Gravimetric – 20 Marks Preparation or Estimation = 20 Marks Notebook and Regularity – 10 Marks Viva-voce – 10 Marks

Chemistry

B.Sc. (Hons.)

Semester - VI

DSE (P) :2

Organic Chemistry (Practical)

Full Marks – 30 Time :04 Hours

- 1. Preparation of Methyl orange.
- 2. Determination of molecular weight of organic acid by silver salt method.
- 3. Determination of food adulterants in the given food items.
- 4. Determination of the percent purity of glucose.

Experiment – 15 Marks Notebook and Regularity –10 Marks Viva-voce – 05 Marks

Chemistry

B.Sc. (Hons.)

Semester - VI

DSE 4

Project Work (End Sem.)

Time:06 Hours

(Written component = 100 Marks) (Written component = 80 + Viva- 20) Credit = 6

The paper will consist of

- (a) Field work / Lab work related to the project.
- (b) Preparation of dissertation based on the work undertaken.
- (c) Presentation of project work in the seminar on the assigned topic in the Department of Chemistry.

NB: The students will select topics for the project work in consultation with a teacher of the Department.

TOPICS

Project work related to the following Industrial / Socially relevant topics may be given to the students.

- (a) Environmental study such as (i) Analysis of Water, Soil, etc.
- (b) Industrial goods analysis such as:
 - (i) Analysis of Cement.
 - (ii) Analysis of Haematite.
 - (i) Analysis of minerals available in Jharkhand State.
 - (ii) Synthesis of useful commercial products based on raw materials available in Jharkhand State such as Limestone etc.

Each student has to submit the dissertation work duly signed by HOD of the Department.



B.Com. (Hons.) CBCS

Draft Syllabus and Scheme of Examination

For

B.Com (Honours)

KOLHAN UNIV., CHAIBASA

Choice Based Credit System

B.COM Honours

				D.COIVI HU	iioais		100	SINGHBH	سالتالس	
Sem	Core Cou	ırse	DSE	AECC	SEC	GE	Full* Marks	Gredit	Total Marks	Total Credit
	C1 : Financial	Theory					-	5		_
	Accounting	Tutorial					100	1	100	6
	C2: Business	Theory						5		_
	Laws	Tutorial					100	1	100	6
ı				AECC I						
				English/ MIL			50	2	50	2
				Communication						
						GE I:				
						Micro	100	5+1	100	6
						Economics	100	3+1	100	U
			т(OTAL (SEMESTER I)					350	20
	62.6	Theory								
	C3:Corporate Accounting	Tutorial					100	5	100	6
							100	1		
	C4:Corporate Laws	Theory					400	5	100	6
II	Laws	Tutorial					100	1		
				AECC 2			50	2	50	2
				ENV.SCIENCE						
						GE 2				
						Macro	100	5+1	100	6
						Economics				
	TOTAL (SEMESTER II)							350	20	
	C5: Auditing	Theory						5		_
	&Corporate Governance	Tutorial					100	1	100	6
	C6: Income-	Theory					100	5		
	Tax Law and								100	6
	Practice	Tutorial					100	1		
Ш	C7:	Theory						5		
""	Management Principles								100	6
	&Application	Tutorial					100	1		
		1			SEC 1					
					G.K		50	2	50	2
					&Current Affairs		-		_	
					7.110113	GE 3				
						Planning and	100	5+1	100	6
						Economic Development				
	TOTAL (SEMESTER III)						450	26		

THAND IN										
	C8: Cost and	Theory						OHASPUR		_
	Management Accounting	Tutorial					100	1	100	6
	C9: Business	Theory					100	5		
	Mathematics								100	6
	& Statistics	Tutorial					100	1		
IV	C10:Computer	Theory						5	100	
''	Application in Business	Tutorial					100	1		6
	in business						100	1		
					SEC 2 Persona -					_
					lity Develop-		50	2	50	2
					ment					
						GE 4				
ĺ						Business	100	5+1	100	6
						Mathematics				
			ТОТА	L (SEMESTER IV)					450	26
	C11: Human	Theory						5	400	6
	Resource Management	Tutorial					100	1	100	6
	C12:Financial	Theory					100	5		
	Management	Tutorial					100	1	100	6
			DSE 1: Any one:-				100			
v			a) Banking				100	F.4	100	
			and Insurance				100	5+1	100	6
			b) E-Commerce							
			DSE 2: Any one:-							ļ.
			a) E-Filing of Returns				100	5+1	100	6
			b)Entrepreneur							
			-ship							
		T	TOTA	L (SEMESTER V)	T			T	400	24
	C13: Goods &	Theory						5	100	6
	Service Tax	Tutorial					100	1	100	
	C14: Principles	Theory						5	100	6
	of Marketing	Tutorial					100	1	100	9
VI			DSE 3: Any one:-							
VI			a) New Venture Planning				100	5+1	100	6
			b) Computerised				100	3.1	100	O
			Accounting							
			DSE 4: Business							
			Research Methods and				100	5+1	100	6
			Project Work							
	TOTAL (SEMESTER VI)						400	24		

CC= Core Course; DSE = Discipline Specific Elective; AECC= Ability Enhancement Compulsory Courses; SEC= Skill Enhancement Courses; GE= Generic Elective.



Paper code	Course Structure	Course Type					
Semester I							
BCH1.1	Financial Accounting	Core Discipline – C1					
BCH1.2	Business Laws	Core Discipline – C2					
BCH 1.3		Ability Enhancement Courses—AECC1					
ВСП 1.3	Eng/MIL – Communication	Ability Elliancement Courses—AECC1					
BCH 1.4	Micro Economics	Generic Elective – GE1					
	Semester II						
BCH 2.1	Corporate Accounting	Core Discipline – C3					
BCH 2.2	Corporate Laws	Core Discipline – C4					
BCH2.3	Environmental Science	Ability Enhancement Courses– AECC2					
BCH2.4	Macro Economics	Generic Elective – GE2					
	Semester III						
BCH 3.1	Auditing and Corporate Governance	Core Discipline – C5					
BCH 3.2	Income- Tax Law and Practice	Core Discipline – C6					
BCH3.3	Management Principles and Application	Core Discipline – C7					
2 0110.10	Transport Interpret und Experience	Core Discipline					
BCH3.4	General Knowledge &Current Affairs	Skill Enhancement Courses- SEC1					
BCH3.5	Planning and Economic Development	Generic Elective – GE3					
BCH3.3							
	Semester IV						
BCH 4.1	Cost and Management Accounting	Core Discipline – C8					
BCH 4.2	Business Mathematics &Statistics	Core Discipline – C9					
BCH4.3	Computer Application in Business	Core Discipline – C10					
D CITAL 1	D. P. I	GLULE I					
BCH4.4	Personality Development	Skill Enhancement Courses- SEC2					
BCH4.5	Basic Mathematics	Generic Elective – GE4					

W. SINGHBHUM





Semester V						
BCH 5.1	Human Resource Management	Core Discipline – C11				
BCH 5.2	Financial Management	Core Discipline – C12				
BCH5.3	Any one:- a) Banking and Insurance b) E-Commerce	Discipline SpecificElective – DSE1				
BCH5.4	Any one:- a) E-Filling of Returns b) Entrepreneurship	Discipline SpecificElective – DSE2				

Semester VI					
BCH 6.1	Goods & Service Tax	Core Discipline – C13			
BCH 6.2	Principles of Marketing	Core Discipline – C14			
ВСН6.3	Any one:- a) New Venture Planning b) Computerised Accounting	Discipline Specific Elective – DSE3			
BCH6.4	Business Research Methods and Project Work	Discipline Specific Elective – DSE4			



B.Com. (HONS.): Semester – I
Paper code- BCH1.1: Financial Accounting

Duration Time: 3 Hrs Marks: 100 Lecture 65

(End Semester 70 Marks + Mid Semester 30 Marks)

Objectives:-The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting and to impact skills for recording various kinds of business transactions.

CONTENTS

Unit 1. Theoretical Framework

10 Lectures

- i. Accounting as an information system. The users of financial accounting information and their needs. Qualitative characteristics of accounting, information. Functions, advantages and limitations of accounting Branches of accounting Bases of accounting; cash basis and accrual basis.
- **ii.** The nature of financial accounting principles-Basic concepts and conventions: entity, money measurement, going concern, cost, realization, accruals, periodicity, consistency, prudence (conservatism), materiality and full disclosures.
- **iii.** Financial accounting standards: Concept, benefits, procedure for issuing accounting standards in India. Salient features of Accounting Standard (AS): 1 (ICAI). International Financial Reporting Standards (IFRS) :- Need and procedures.

Unit 2. Business Income 15 Lectures

- i. Accounting For Non-Profit Organisations
- ii. The nature of depreciation .The accounting concept of depreciation .factors in the measurement of depreciation. Methods of computing depreciation : straight line method and diminishing balance method; disposal of depreciable assets change of method .Salient features of Accounting Standard (AS): 6 (ICAI)
- iii. Inventories: Meaning. Significance of inventory valuation. Inventory Record Systems: periodic and perpetual. Methods: FIFO, LIFO and weighted Average. Salient features of Accounting Standard (AS):2 (ICAI)

Unit 3.Accounting for Inland Branches

15 Lectures

Concept of dependent braches; accounting aspects; debtors system, stock and debtors system, branch final accounts system and whole sale basis system. Independent branches: concept-accounting treatment: important adjustment entries and preparation of consolidated profit and loss account and balance sheet.

Unit 4. Accounting for hire Purchase and Instalment Systems

10 lectures

Unit 5. Accounting for Dissolution of the Partnership Firm

15 Lectures

Accounting of Dissolution of the Partnership Firm including Insolvency of partners, sale to a limited company and piecemeal distribution.





- 1. Anthony ,R.N Hawkins ,and Merchant ,Accounting : Text and Cases.McGraw Hill Education.
- 2. Horngren , Introduction to Financial Accounting , Pearson Education.
- 3. Monga, J.R. Financial Accounting: Concepts and Applications . Mayoor Paper Backs, New Delhi.
- 4. Shukla ,M.C., T.S.Grewal and S.C. Gupta. Advanced Accounts. Vol. I.S. Chand & Co., New Delhi.
- 5. Maheshwari ,S.N and S.K.Maheshwari .Financial Accounting.Vikas Publishing House,New Delhi.
- 6. Sehgal ,Ashok ,and Deepak Sehgal .Advanced Accounting .Part I . Taxman Applied Services,New Delhi.
- 7. Bhushan Kumar Goyal and HN Tiwari ,Financial Accounting ,International Book House
- 8. Goldwin , Alderman and Sanyal , Financial Accounting, Cengage Learning.
- 9. Tulsian , P.C Financial Accounting, Pearson Education
- 10. Jain ,S.P and K.L .Narang .Financial Accounting, Kalyani Publishers ,New Delhi.
- 11. Gupta, Nirmal. Financial Accounting. Sahitya Bhawan, Agra.
- 12. Compendium of Statements and Standards of Accounting . The Institute of Charted Accountants of India, New Delhi.
- 13. Dr. B.N. Ojha, Financial Accounting (Hindi Edition).

Note:- Latest edition of the text books should be used.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
А	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type questions, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	2 x15 = 30
	Total	70



B.Com.: Semester I

Paper BCH 1.2: BUSINESS LAWS

Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: The objective of the course is to impart basic knowledge of the important business laws along with relevant case law.

Contents:

Unit I: The Indian Contract Act, 1872: General Principle of Law of contract. 13 Lectures

- a) Contract meaning ,characteristics and kinds
- b) Essentials of valid contract Offer and acceptance, consideration, contractual capacity, free consent, legality of objects.
- c) Void agreements
- d) Discharge of contract- mode of discharge including breach and its remedies.
- e) Contingent contracts
- f) Quasi -contracts

Unit II: The Indian Contract Act, 1872: Specific Contract

13 Lectures

- a) Contract of Indemnity and Guarantee
- b) Contract of Bailment
- c) Contract of Agency

Unit III: The Sale of Goods Act, 1930

13 Lectures

- a) Contract of sale, meaning and difference between sale and agreement to sell.
- b) Conditions and warranties
- c) Transfer of ownership in goods including sale by non-owners
- d) Performance of contract of sale
- e) Unpaid seller meaning and rights of an unpaid seller against the goods and the buyer.

Unit IV: Partnership Laws

13 Lectures

A) The Partnership Act, 1932

- a. Nature and Characteristics of Partnership
- b. Registration of Firms
- c. Types of Partners
- d. Rights and duties of Partners
- e. Implied Authority of a Partner
- f. Mode of Dissolution of Partnerships
- B) The Limited Liability Partnership Act, 2008 (an overview), Comparative Analysis with Partnership Act, 1932

Unit V: The Negotiable Instruments Act 1881

13 Lectures

- a) Meaning and Characteristics of Negotiable Instruments: Promissory Note, Bill of Exchange, Cheque
- b) Holder and Holder in due Course, Privileges of Holder in Due Course.
- c) Negotiation: Types of Endorsements
- d) Crossing of Cheque
- e) Bouncing/Dishonour of Cheques



- 1. Kuchhal, M.C and VivekKuchhal , Business Law, Vikas Publishing House, New Delhi.
- 2. Singh, Avtar, Business Law, Eastern Book Company, Lucknow.
- 3. Maheshwari&Maheshwari , BusinessLaw, National Publishing House, New Delhi.
- 4. Chandha ,P.R., Business LawGalgotia Publishing Company, New Delhi
- 5. Aggarwal S K. Business Law , Galgotia Publishers Company, New Delhi
- 6. GoyalBhushan Kumar and Jain kinneri, Business Laws, International Book House
- 7. RavindraKumar, Legal Aspects of Business, Cengage Learning

Note:- Latest edition of the text books should be used.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
А	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	2 x15 = 30
	Total	70



B.Com (HONS): Semester-1



Paper code- BCH.1.3: ENG/MIL – Communication

Time: 3 Hrs Marks: 50

(End Semester 35 Marks + Mid Semester 15 Marks)

Common Syllabus to be provided by the respective Department

B.Com.: Semester I



BCH 1.4: Micro Economics

Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Course Description: This course is designed to expose the students to the basic principles of microeconomic theory. The emphasis will be on thinking like an economist and the course will illustrate how microeconomic concepts can be applied to analyze real-life situations.

Course Outline

1. Exploring the subject matter of Economics

Lecture 16

Why study economics? Scope of economics; The economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output; science of economics; the basic competitive model; prices, economic systems: reading and working with graphs.

2. Supply and Demand: How Markets Work, Markets and Welfare

Lecture 16

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, elasticity and its application; controls on prices; consumer surplus.

3. The Households Lecture 16

The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of indifference curves; consumer's optimum choice; income and substitution effects.

4. The Firm and Perfect Market Structure

Lecture 9

Behaviour of profit maximizing firms and the production process; short run costs and output decisions; costs and output in the long run.

5. Imperfect Market Structure

Lecture 8

Monopoly; Government policies towards competition; imperfect competition.

Readings

- 1. Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8th Edition, 2007.
- 2. N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.
- 3. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007
- 4. Arthashastra- Dr .Suman.

B.Com. (HONS.): Semester – II Paper code- BCH2.1: Corporate Accounting



Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objectives: To help the students to acquire the conceptual knowledge of the corporate accounting and to learn the techniques of preparing the financial statements.

Contents

Unit 1. Accounting for Share Capital & Debentures

15 Lectures

Issue, forfeiture and reissue of forfeited shares – concept & process of book building. Issue of rights and bonus shares. Buy back of shares. Redemption of preference shares. Issue and Redemption of Debentures.

Unit 2. Final Accounts 8 Lectures

Preparation of profit and loss account and balance sheet of corporate entities, excluding calculation of managerial remuneration. Disposal of company profits.

Unit 3. Valuation of Goodwill and Valuation of Shares

6 Lectures

Concepts and calculation – simple problem only.

Unit 4. Amalgamation of Companies

15 Lectures

Concepts and accounting treatment as per Accounting Standard: 14 (ICAI) (excluding intercompany holdings). Internal reconstruction: concepts and accounting treatment excluding scheme of reconstruction.

Unit 5. Accounts of Holding Companies / Parents Companies

14 Lectures

Preparation of consolidated balance sheet with one subsidiary company .Relevant provisions of Accounting Standard: 21 (ICAI)

Unit 6. Liquidation of Companies

7 Lectures

Voluntary Liquidation only.

Suggested Readings:-

- 1. Monga, J.R Fundamentals of corporate Accounting. Mayur Paper Backs, New Delhi .
- 2. Shukla, M.C., T.S. Grewal, and S.C Gupta. advanced Accounts. Vol II. S. Chand & Co., New Delhi.
- 3. Maheshwari, S.N and S.K .Maheshwari .Corporate Accounting. Vikash Publishing House, new Delhi.
- 4. Sehgal, Ashok and Deepak Sehgal. Corporate Accounting. Taxman Publication, New Delhi.
- 5. Gupta, Nirmal. Corporate Accounting. Sahitya Bhawan, Agra.
- 6. Jain, S.P. and K. L. Narang. *Corporate Accounting*. Kalyani Publishers, New Delhi.
- **7.** Compendium of Statements and Standards of Accounting .The Institute of Chartered Accounts of India, New Delhi.
- 8. Bhushan Kumar Goyal, Fundamentals of corporate Accounting. international Book House.
- 9. Dr. B.N Ojha, Corporate Accounting.
- 10. Dr. S.K Singh & Dr. B.K. Mehta, Specialised Accounting, SBPD Publication, Agra.



The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2	10 x 2 = 20
	Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70

B.Com. (HONS.): Semester – II Paper code-BCH 2.2: Corporate Law



Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: The objective of the course is to impart basic knowledge of the provisions of the Companies Act 2013. Case studies involving issues in company law are required to be discussed.

UNIT 1:Introduction – 15 Lectures

Administration of Company Law [including National Company Law Tribunal (NCLT), National Company Law Appellate Tribunal (NCLAT), Special Courts]; Characteristics of a company; lifting of corporate veil; types of companies including one-person company, small company and dormant company; association not for profit; illegal association; formation of company, on-line filing of documents, promoters, their legal position, pre-incorporation contract; on-line registration of a company.

UNIT 2:Documents – 15 Lectures

Memorandum of association, Articles of association, Prospectus, Misstatement in a Prospectus, D-Mat System

UNIT 3: Management: 15 Lectures

Classification of directors, women directors, independent director, small shareholder's director; Disqualifications, director identity number (DIN); Appointment; Legal positions, powers and duties; removal of directors; Key managerial personnel, managing director, manager; Meetings of shareholders and board; Types of meeting, convening and conduct of meetings, postal ballot, meeting through video conferencing, e-voting; Committees of Board of Directors - Audit Committee, Nomination and Remuneration Committee.

UNIT 4: Dividends, Accounts, Audit-

10 Lectures

Provisions relating to payment of Dividend, Provisions relating to Books of Account, Provisions relating to Audit, Auditors' Appointment, Rotation of Auditors, Auditors' Report, Secretarial Audit.

UNIT V: Winding up – 10 Lectures

Concept and modes of Winding Up. Insider-Trading, Whistle-Blowing – Insider-Trading; meaning and legal provisions; Whistle-blowing: Concept and Mechanism.

Suggested Readings:

- 1. MC Kuchhal, Modern Indian Company Law, Shri Mahaveer Book Depot (Publishers), Delhi.
- 2. GK Kapoor and Sanjay Dhamija, Company Law, Bharat Law House, Delhi.
- 3. Anil Kumar, Corporate Laws, Indian Book House, Delhi
- 4. ReenaChadha and SumantChadha, Corporate Laws, Scholar Tech Press, Delhi.
- 5. Avtar Singh, Introduction to Company Law, Eastern Book Company
- 6. Ramaiya, A Guide to Companies Act, LexisNexis, Wadhwa and Buttersworth.
- 7. Manual of Companies Act, Corporate Laws and SEBI Guideline, Bharat Law House, New Delhi,.
- 8. A Compendium of Companies Act 2013, along with Rules, by Taxmann Publications.
- 9. Gower and Davies, Principles of Modern Company Law, Sweet & Maxwell
- 10. Sharma, J.P., An Easy Approach to Corporate Laws, Ane Books Pvt. Ltd., New Delhi

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

W. SINGHBHUM

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/	$10 \times 2 = 20$
	Fill in the blanks etc.) consisting 10 question of 2	
	Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4	$4 \times 5 = 20$
	have to be answered for 5 marks each.	
С	4 question of long answer (400 words) type, of	$2 \times 15 = 30$
	which 2 have to be answered for 15 marks each.	
	Total	70

B. Com (HONS.) CBCS



B. Com (HONS.): Semester – II
Paper code- BCH 2.3: Environmental Science
Time: 3 Hrs Marks: 50
(End Semester 35 Marks + Mid Semester 15 Marks)

- 1. Composition of Earth Crust.
- 2. Composition of atmosphere.
- 3. Atmospheric Structure.
- 4. Green house effect/Global warming.
- 5. Ozone depletion
- 6. Acid rain
- 7. Forest conservation.
- 8. Sustainable Ecosystem.
- 9. Impact of population pressure on India's environment.
- 10. Radio activity (Nuclear disaster).
- 11. Noise Pollution
- 12. The Earth Summits

B.Com. HONS: Semester II



BCH 2.4: Macro Economics

Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Course Description

This course aims to introduce the students to the basic concepts of Macroeconomics. Macroeconomics deals with the aggregate economy. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation, and the balance of payments.

Course Outline

1. Introduction to Macroeconomics and National Income Accounting

Basic issues studied in macroeconomics; measurement of gross domestic product; income, expenditure and the circular flow; real versus nominal GDP; price indices; national income accounting for an open economy; balance of payments: current and capital accounts.

2. Money

Functions of money; quantity theory of money, Cambridge Equation & Fischer Equation; determination of money supply and demand; credit creation; tools of monetary policy.

3. Inflation

Inflation and its social costs; hyperinflation. Unemployment-The trade-off between inflation and unemployment.

4. The Closed Economy in the Short Run

Classical and Keynesian systems; simple Keynesian model of income determination.

5. Open Economy-

Flow of goods and capital, Saving and investment in a small and a large open economy, exchange rates, Mundell-Fleming model with fixed and flexible prices in a small open economy with fixed and flexible exchange rates, interest rates, interest rates differential case of a large economy.

Readings:

- 1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
- 2. Arthashastra- Dr.Suman.
- 3. N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010.
- 4. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
- 5. Richard T. Froyen, *Macroeconomics*, Pearson Education Asia, 2nd edition, 2005.
- 6. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc.,7th edition, 2011.
- 7. Errol D'Souza, *Macroeconomics*, Pearson Education, 2009.
- 8. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, *International Economics*, Pearson Education Asia, 9th edition, 2012.



B. Com (HONS.): Semester – III Paper code- BCH 3.1: AUDITING AND CORPORATE GOVERNANCE Time: 3 Hrs Marks: 100 Lecture 65

(End Semester 70 Marks + Mid Semester 30 Marks)

Objective: To provide knowledge of auditing principles, procedures and techniques in accordance with current legal equipment and professional standards.

Contents:

Unit I: (13 lectures)

Auditing: Introduction, Meaning, Objects, Basic principles and techniques; Classification of Audit, Audit Planning, Internal Control- Internal Check and Internal Audit; Audit Procedure- vouching and verification of Assets and Liabilities.

Unit II: (13 Lectures)

Audit of Limited Companies: Company Auditor- Qualifications and disqualifications, Appointments, Rotation, Removal, Remuneration, Rights and Duties, Auditor's report- Contents and types, Liabilities and Statutory Auditors under the Companies Act 2013.

Unit III: (13 Lectures)

Special areas of Audit: Special features of cost Audit. Tax audit, and Management audit; Recent trends in auditing; Basic considerations of audit in EDP Environment; Standard on Auditing (SA); Relevant case studies/Problems.

Unit IV: (13 Lectures)

Corporate Governance: Conceptual framework of Corporate Governance, Corporate Governance Reforms, Major corporate scandals in India and Abroad, Common Governance problems noticed in various corporate failures, codes and standards on Corporate Governance.

Unit V: (13 Lectures)

Corporate Social Responsibility: Strategic planning and Corporate Social Responsibility; Corporate Philanthropy, Meaning of CSR, CSR and CR, CSR and Corporate Sustainability, CSR and Business Ethics, CSR and Corporate Governance, Environmental spect of CSR, CSR Provision under the Companies Act 2013, CSR Committees.

Suggested Readings:

- 1. Gupta, Kamal and Ashok Arora, Fundamentals of Auditing, Tata McGraw Hill Publishing Co. Ltd., New Delhi
- 2. Jha, Aruna, Auditing., Taxmann
- 3. Tandon, B. N, Sudharsanam and S. Sundharabahu., A Handbook of Practical Auditing. S Chand and Co. Ltd., New Delhi.
- 4. Ghatalia, S. V. Practical Auditing, Allied Publishers Pvt. Ltd, New Delhi
- 5. Singh, A. K and Gupta Loveleen, Auditing Theory and Practice, Galgotia Publishing Company.
- 6. Alvin Arens and James Loebbecke, Auditing: an Integral Approach.
- 7. Ravindar Kumar and Virendra Sharma, Auditing Principles and Practice, PHI Learning Christine A Mallin, Corporate Governance (Indian Edition), Oxford University Press, New Delhi.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

W. SINGHBHUM

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/	$10 \times 2 = 20$
	Fill in the blanks etc.) consisting 10 question of 2	
	Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4	$4 \times 5 = 20$
	have to be answered for 5 marks each.	
С	4 question of long answer (400 words) type, of	$2 \times 15 = 30$
	which 2 have to be answered for 15 marks each.	
	Total	70

B.Com. (HONS.): Semester – III Paper code- BCH 3.2: INCOME TAX LAW AND PRACTICES

Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: To provide basic Knowledge and equip students with application of principles and provisions of Income Tax Act, 1961.

UNIT	CONTENTS	NO. OF LECTURES
Unit I	Basic Concept: Income, agricultural income, person, assesse, assessment year, previous year, gross total income, maximum marginal rate of tax, Permanent Account Number (PAN), Residential status, scope of total income on the basis	10
	of residential status,Exempted income under section 10	
Unit II	Computation of income under different heads	25
	- Salaries	
	- Income from house property	
	 Profits and Gains of business or professions 	
	- Capital gains	
	- Income from other sources	
Unit III	Total Income and Tax Computation	17
	- Income of other person included in assessee's total income	
	 Aggregation of income and set- off and carry forward of losses 	
	 Deduction from gross total income 	
	- Rebates and reliefs	
	 Compensation of total income of individuals and firms 	
	Tax liability of an individual	
Unit IV	Preparation of return of income	13
	- Manually	
	- On- line filling of return of income and TDS	
	 Provision and Procedure of Compulsory On- Line filing of returns for specified assesses. 	

There shall be a practical examination of 30 Marks on e-filing of Income Tax Returns using a software utility tool. The student is required to fill appropriate form and generate the XML file.

Suggested Readings:

- 1. Singhania, Vinod, K and Monica Singhania, *Student's guide to Income Tax*, University edition, Taxmann publication Pvt. Ltd., New Delhi
- 2. Ahuja, Girish and Ravi Gupta, Systematic Approach to Income Tax. Bharat Law House. Delhi
- 3. Pagare, Dinker, Law and Practices of Income Tax. Sultan Chand and Sons, New Delhi
- 4. Lal, B. B Income Tax Law and Practices. Konark Publications, New Delhi
- 5. Dr. P.K Pani, Income Tax Laws & Accounts, SBPD Publication, Agra.

Journals

- 1. Income Tax Reports, Company Law Institute of India Pvt. Ltd, Chennai
- 2. Taxman, Taxmann Allied SevicesPvt. Ltd., New Delhi

Note:- Latest edition of the text books should be used.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

W. SINGHBHUM

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/	$10 \times 2 = 20$
	Fill in the blanks etc.) consisting 10 question of 2	
	Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4	$4 \times 5 = 20$
	have to be answered for 5 marks each.	
С	4 question of long answer (400 words) type, of	$2 \times 15 = 30$
	which 2 have to be answered for 15 marks each.	
	Total	70

B.Com. (HONS.): Semester - III

Paper code- BCH 3.3: Management Principles & Application

Time: 3 Hrs Marks: 100 Lecture 65

(End Semester 70 Marks + Mid Semester 30 Marks)

Objective: The objective of the course is to provide the student with an understanding of basic management concepts, principles and practices.

Unit I: Introduction 13 Lectures

- 1.1 Concept: Need for study; Managerial functions An overview; Coordination Essence of management.
- 1.2 Evolution of Management Thought: Classical approach Taylor, Fayol, Neo classical and Human relations approach Hawthorne experiments, Behavioural approach, Systems approach..
- 1.3 Trends and Challenges of Management in Global Scenario, Emerging issues in management.

Unit II: Planning 13 Lectures

- 2.1 Types of Plan An overview.
- 2.2 Strategic planning Concept, process, Importance and limitations.
- 2.3 Environmental analysis and diagnosis (Internal and external environment) Definition, Importance and Techniques (SWOT/TOWS).
- 2.4 Decision-making Concept, importance, group decision making, Individual versus group decision making, Decision making process, perfect rationality and bounded rationality, techniques (qualitative and quantitative).

Unit III: Organising 13 Lectures

- 3.1 Concept.
- 3.2 Process of organizing An overview, span of management, different types of authority (line, staff and functional), decentralization, delegation.
- 3.3 Formal and informal organization.
- 3.4 Principles of organizing.
- 3.5 Types of organization structure.

Unit IV: Staffing and Directing

18 Lectures

W. SINGHBHUM

- 4.1 Concept of staffing Recruitment and Selection; Orientation; Training and Development; Career Development; Performance Appraisal.
- 4.2 Motivation Concept, importance, intrinsic and extrinsic motivation; Major motivation theories Maslow's need hierarchy theory..
- 4.3 Leadership Concept, importance; Major theories of leadership (Likert's scale theory), Transactional leadership, Transformational leadership, Transforming leadership.
- 4.4 Communication Concept, purpose, process; Oral and written communication; Formal and informal communication networks; Barriers to communication, overcoming barriers to communication.

Unit V: Control 8 Lectures

5.1 Concept, process, limitation, principles of effective control, Major techniques of control - Ratio analysis (ROI), budgetary control, PERT, and CPM.

Suggested Readings:

- 1. Koontz, H. and Weihrich, H. Essentials of Management, Pearson Education.
- 2. Robbins, S. and Coulter, M. Management, Pearson Education.
- 3. Robbins, S. P.Decenzo, D.A., Bhattacharya, S. and Agrawal, M.M., *Fundamentals of Management: Essentials, Concepts and Applications*, Pearson Education.
- 4. Drucker P. F., *Practice of Management*, Mercury Books, London.
- 5. Singh, B.P. and Singh, A.K., Essentials of Management, Excel Books.
- 6. Chhabra, T.N., Essentials of Management, Sun India.

7. Griffin, R.W., Management Principles and Application, Cengage Learning The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

W. SINGHBHUM

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/	10 x 2 = 20
	Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4	4 x 5 = 20
	have to be answered for 5 marks each.	
С	4 question of long answer (400 words) type, of	$2 \times 15 = 30$
	which 2 have to be answered for 15 marks each.	
	Total	70

B.Com. HONS: Semester III

BCH 3.4: GENERAL KNOWLEDGE & CURRENT AFFAIRS

Time: 3 Hrs Marks: 50

(End Semester 35 Marks + Mid Semester 15 Marks)

- 1. Famous authors.
- 2. The fine arts.
- 3. Dates and events.
- 4. Battles and wars.
- 5. India history and culture.
- 6. Constitutional Governor-Generals of Indian States.
- 7. Development of India.
- 8. Important events in world History.
- 9. National Animal, Bird, Flower, Indian States.
- 10. The Constitution of India.
- 11. India defence and Allied topic.
- 12. Institution, Research stations and Plants in India.
- 13. Planning in India.
- 14. Art and Culture.
- 15. Newspaper in India and Abroad.
- 16. Railways in India.
- 17. Civil Aviation.
- 18. Multi-Purpose river valley projects in India.
- 19. First in India.
- 20. First in different fields.
- 21. Mankind and various tribes.
- 22. United Nations Organization.
- 23. Inventions and Discoveries.
- 24. Working principle of some scientific instruments hygiene and physiology.
- 25. Sciences dealing with different subjects, units of measurement.
- 26. Geography.
- 27. Some curios.
- 28. Physical Geography.
- 29. Geographical Terms.
- 30. Space Research.
- 31. Awards and Prizes.
- 32. Treaties, pacts and conference etc.
- 33. Terminology.
- 34. Groups and Organization, Personalities (Past & Present).
- 35. Agriculture.
- 36. The Non-aligned moment from Belgrade to Harare.
- 37. Countries of the world.
- 38. Current Topics.

B.Com. HONS: Semester III



BCH 3.5: PLANNING AND ECONOMIC DEVELOPMENT

Duration: 3 hrs. Marks: 100 Lectures: 65

Objectives: This course seeks to enable the student to grasp the major economic problems in India and their solutions. It also seeks to provide an understanding of modern tools of macro-economic analysis and policy framework.

Contents

Unit 1 (13 Lectures)

Meaning, Objects, Scope and Importance of Economic Planning.

Types of Economic Planning – Economic Planning in an underdeveloped economy.

Unit 2: (13 Lectures)

Essential of planning-steps in planning – planning in India

Unit 3: Growth, Development and Structural Change

(13 Lectures)

- a) Changes in policy perspectives on the role of institutional framework after 1991.
- b) Growth and Distribution; Unemployment and Poverty; Human Development; Environmental concerns.
- c) Demographic Constraints: Interaction between population change and economic development.

Unit 4: Sectoral Trends and Issues

(13 Lectures)

- a) Agriculture Sector: Agrarian growth and performance in different phases of policy regimes i.e. pre green revolution and the two phases of green revolution; Factors influencing productivity and growth; price policy.
- b) *Industry and Services Sector:* Phases of Industrialisation: Public sector its role, performance and reforms; The small scale sector; Role of Foreign capital.
- c) Financial Sector: Structure, Performance and Reforms. Foreign Trade and balance of Payments: Structural Changes and Performance of India's Foreign Trade and Balance of Payments; India and the WTO, Role of FDI, Capital account convertibility.

Unit 5: Inflation, Unemployment

(13 Lectures)

Inflation: Causes of rising and falling inflation, inflation and interest rates, social costs of inflation; Unemployment – natural rate of unemployment, frictional and wait unemployment.



- 1. Mishra and Puri, *Indian Economy*, Himalaya Paublishing House
- 2. IC Dhingra, *Indian Economy*, Sultan Chand & Sons
- 3. GauravDutt and KPM Sundarum, *Indian Economy*, S. Chand & Company.
- 4. Uma Kapila (ed), "Indian Economy since Independence", Relevant articles.
- 5. Bhagwati, J. and Desai, P. India: Planning for industrialization, OUP, Ch 2.
- 6. Patnaik, Prabhat. *Some Indian Debates on Planning*. T. J. Byres (ed.). The Indian Economy: Major Debates since Independence, OUP.
- 7. Ahluwalia, Montek*S. State-level Performance under Economic Reforms in India* in A. O. Krueger. (ed.). *Economic Policy Reforms and the Indian Economy*, The University of Chicago Press.
- 8. Mankiw, N. Gregory. Principles of Macroeconomics. Cengage Learning
- 9. RudigerDornbusch, Stanley Fischer, and Richard Startz, *Macroeconomics*. McGraw-Hill Education
- 10. Oliver J. Blanchard, Macroeconomics, Pearson Education
- 11. G. S. Gupta, Macroeconomics: Theory and Applications, McGraw-Hill Education
- 12. Paul A Samuelson, William D Nordhaus, SudipChaudhuri, *Macroeconomic*, McGraw-Hill Education

B.Com. HONS: Semester IV Paper BCH 4.1: Cost & Management Accounting



Time: 3 Hrs Marks: 100 Lecture 65

(End Semester 70 Marks + Mid Semester 30 Marks)

Objective: To acquaint the students with basic concepts management accounting and various methods involved in cost ascertainment systems.

Contents:

Unit I: (13 Lectures)

Introduction: Meaning, objectives and advantages of cost accounting, difference between financial, cost and management accounting and cost concepts and classifications, Role of a cost accountant in an organization.

Unit II:

Elements of cost (13 Lectures)

- **a.** Materials: Material/inventory control- concept and techniques, Accounting and control of purchases, storage and issue of materials, method of pricing of materials issues FIFO,LIFO, Simple Average, Weighted Average.
- **b.** Labour: Accounting and control of labour cost, time keeping and time booking, concept and treatment of ideal time, over time, labour turnover and fringe benefits.
- **c.** Overhead: Classification, allocation, capacity costs, treatment of certain items in costing Machine Hour Rate.

Unit III: (13 Lectures)

Methods of costing, unit costing, job costing, contract costing, process costing (process losses, valuation of work in progress, joint and by- products) service costing (only transport), Reconciliation of cost and financial accounts.

Unit IV: (13 Lectures)

Budgeting and Budgetary control: concept of Budget and Budgetary control, objectives, merits and limitations, Types of Budgets.

Unit V: (13 Lectures)

Absorption versus variable costing: distinctive features and income determination. Cost-volume profit Analysis: Break- even analysis- algebraic and graphic methods. Contribution/ sales ratio, key factor. Margin of safety. Angle of incidence. Introduction of Fund flow and Cash Flow Analysis.

Suggested Readings:

- 1. Horngreen, Charles T., George Foster and Srikant M. Dattar, *Cost Accounting: A Managerial Emphasis*, Prentice Hall of IndiaLtd. New Delhi.
- 2. Horngreen, Charles T., Gary L. Sundem, *Introduction to Management Accounting*, Prentice Hall.
- 3. Jain, S. P. and K. L. Narang, *Cost Accounting: Principles and Methods*, Kalyani Publishers, Jalandhar.

- 4. Lal, Jawahar, Cost Accounting, Tata McGraw Hill Publication Co, New Delhi.
- 5. Nigam, B. M. Lall and I. C, Jain. *Cost Accounting: Principles and Practices*, Prentice Hall of India, New Delhi.
- 6. Arora. M. N. Cost Accounting: Principles and Practices, Vikas Publishing house, New Delhi.
- 7. Maheshwari, S. N. Mittal, *Cost Accounting: Theory and Problems*, ShriMahabir Book Depot, New Delhi..
- 8. Singh. S. K and Gupta Loveleen, Management Accounting- Theory and Practice, Pinacle Publishing House.
- 9. Usry, Milton E and Lawrence H.Hammer, *Cost Accounting: Planning and Control*. South Western Publishing Co.
- 10. Barfield, Jesset t., Cecily A Raibarn and Michael R. Kinney. *Cost Accounting: Traditional and Innovations*. Thomson Learning.
- 11. Lucey, T. Costing. ELST, London.
- 12. Garrison H., Ray and Eric W. Nooren, *Managerial Accounting*, McGraw Hill.
- 13. Drury, Colin. Management and Cost Accounting, CengageLearnind.
- 14. Lal, Jawahar, Advance *Management Accounting Test and Cases*, S. Chand and Company, New Delhi.
- 15. Khan M. Y and P. K Jain, *Managerial Accounting*, Tata McGraw Hill, Publishing Company, New Delhi.
- 16. Hansen, Managerial Accounting, Cengage Learning
- 17. Dr. B.K. Mehta, Cost & Management Accounting, SBPD Publication, Agra.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/	10 x 2 = 20
	Fill in the blanks etc.) consisting 10 question of 2	
	Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4	$4 \times 5 = 20$
	have to be answered for 5 marks each.	
С	4 question of long answer (400 words) type, of	$2 \times 15 = 30$
	which 2 have to be answered for 15 marks each.	
	Total	70

B. Com (HONS.) CBCS

B. Com (HONS.): Semester – IV Paper code- BCH 4.2: BUSINESS MATHEMATICS & STATISTICS

Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: The objective of this course is to familiarize students with the basic statistical tools to summarize and analyze quantitative information for decision making.

Unit I: Progressions: (10 Lectures)

AP,GP, HP

Unit II: Matrices and Determinants

(15 Lectures)

Algebra matrices, inverse of a matrix, Matrix operation- Business application.

Solution of system of linear equations

Unit III: Probability and Probability Distribution

(10 Lectures)

- 3.1. Theory of Probability, Approaches to the calculation of probability.
- 3.2. Calculation of event probabilities. Addition and multiplication laws of probability (proof not required)

Unit IV: Statistical Data and Descriptive Statistics

(15 Lectures)

- 4.1. Nature and classification of data: univariate, bivariate and multivariate data; time- series and cross-sectional data.
- 4.2. Measures of central tendency
 - a) Mathematical averages including arithmetic mean, geometric mean and harmonic mean. Properties and applications.
 - b) Positional Averages: Mode and Median (and other partition values including quartiles, deciles, and percentiles) (including graphic determination)
- 4.3. Measures of variations: absolute and relative.
 - Range, quartile deviation, mean deviation, standard deviation, and their coefficients, Properties of standard deviation/variance.
- 4.4. Correlation Analysis: Meaning of correlation, simple, multiple and partial, linear and non-linear, Correlation and Causation, Scatter diagram, Pearson's coefficient of correlation; Calculation and properties (proofs not required), Correlation and Probable error, Rank Correlation.
- 4.5. Regression Analysis. Regression equations and estimation; Relationship between Correlation and Regression coefficients.

Unit V: Index Number (15 Lectures)

Meaning and uses of Index Numbers, Construction of Index Numbers; Fixed and chain base; univariate and composite. Aggregative and average of relatives- simple and weighted.

Suggested Readings:

- **1.** Levin, Richard, David S. Rubin, Rastogi, and Siddiqui, *Statistics for Management*, 7th edition, Pearson Education.
- **2.** Berenson and Levine. *Basic Business Statistics: Concepts and Applications*. Pearson Education.
- 3. Siegel Andrew F. Practical Business Statistics, McGraw Hill.
- **4.** Vohra N. D, *Business Statistics*, McGraw Hill.
- **5.** Spiegel M. D, *Theory and Problems of Statistics*, Schaum's outlines Series. McGraw Hill.Publishing Co.
- **6.** Gupta, S.P and Archana Gupta, *Statistical Methods*, Sultan Chand and Sons, New Delhi.
- 7. Gupta, S.C, Fundamentals of Statistics, Himalaya Publishing House.
- **8.** Anderson Sweeney and William, *Statistics for students of Economics and Business*, Cengage Learning.
- 9. Thukral J. K, Business Statistics.

Note :-The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70

B.Com.HONS: Semester IV



BCH 4.3: COMPUTER APPLICATION IN BUSINESS

Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: To provide computer skills and knowledge for commerce students and to enhance the student's understanding of usefulness of information technology tools for business operations.

Unit I: Word Processing

7 Lectures

Introduction to word processing, word processing concepts, use of templates, Working with word document: (Opening an existing document/creating a new document, Saving, Selecting text, Editing text, Finding and replacing text, Closing, Formatting, Checking and correcting spellings).

Bullets and numbering, tabs, paragraph formatting, Indent, Page formatting. Header and footer, Mail merge Includinglinking with access database, Tables: Formatting the table, Inserting filling and formatting a table.

Creating Documents in the areas: Mail merge including linking with access Database, Handling tables, inserting pictures and videos.

Unit II: Preparing Presentation

6 Lectures

Basics of presentations: Slides, Fonts, Drawing, Editing; Inserting: Tables, images. Texts, symbols, Media; Design; Transition; Animation; and slideshow.

Unit III: Spreadsheet and its Business Application

16 Lectures

Spreadsheet concept, creating a workbook, Saving a work book, Editing a workbook, inserting, deleting work sheets, Entering data in a cell, Formula Copying, Moving Data from selected cell, Handling operators in formula, Rearranging worksheet, project involving multiple spreadsheets, Organizing charts and graphs, Printing worksheet.

Generally used spreadsheet functions: Mathematical, Statistical, Financial, Logical, Date and Time, Lookup and Reference, Text functions.

Unit IV: Creating spreadsheet in the following areas:

16 Lectures

- > Ratio Analysis
- > Payroll statements
- ➤ Capital Budgeting
- Depreciation Accounting
- Graphical Representation of data
- Correlation and Regression

Unit V: Database Management System

20 Lectures

Creating Data tables, editing a Database using Forms, Performing Queries, Generating Reports.

Creating DBMS in the areas of Accounting, Employees, Supplies and Customer



Notes:

- 1. The general purpose software referred in this course will be notified by the University Department every three years. If the specific features, referred in the detailed course above, is not available in that software, to that extent it will be deemed to have been modified.
- 2. There shall be a practical examination of 30marks (Practical- 15 Marks, Viva 10 Marks and 5 Marks for Attendance).
- 3. The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70



B.Com.HONS: Semester IV

BCH 4.4: PERSONALITY DEVELOPMENT

Time: 3 Hrs Marks: 50 (End Semester 35 Marks + Mid Semester 15 Marks)

No	Details	Min Lect.
	Theory	
1.	Introduction Define personality, perception- personality, Man-personal personality, personality Factors- Factors of association- personality Relationship at home-friends- environment educational factor- Situational Factors- Conditional-Genetic- Compulsory- Spiritual public relation factors.	05
2.	Trait Personification/ Personality Traits Personality Traits – personality person – formation – factors influencing person habits of highly effective people & personality habits – Be proactive – Being with the end in mind - put first things first – Think win – seek first to understand the to be understood – Synergize – Sharpen the saw.	07
3.	Self Esteem Term of self esteem – symptoms – advantages – Do's and don'ts to develop positive – Positive self esteem& negative self esteem. Leadership & qualities of successful leader, character building, Teamwork, Lateral thinking, Time management, Work ethics, Personality – A spiritual journey beyond management of change – Good manners & etiquettes – Interpersonal relationship – Analysis of strengths & weaknesses.	06
4.	Leadership Leadership& qualities of successful leader, character building, Teamwork, Lateral thinking, Time Management, Work ethics, Personality – A spiritual journey beyond management of change – Good manners & etiquettes – Interpersonal relationship - Analysis of strengths & weaknesses.	05
5.	Five Pillars of Personality Development Introspection — Self — Assessment — Self — Appraisal — Self Development — Self Introduction	
6.	Ideal Personality Effective communication 7 its key aspects, Body language, Assertiveness, Problem-solving, Conflict & Stress management, Decision making skill, Motivation, Positive & Creative Thinking.	05

B.Com.HONS: Semester IV



Time: 3 Hrs Marks: 100 (End Semester 70 Marks + Mid Semester 30 Marks)



- 2. L.C.M & H.C.F
- 3. Square & Square Root
- 4. Number System
- 5. Percentage
- 6. Profit & Loss
- 7. Discount
- 8. Simple & Compound interest
- 9. Ratio and Proportion
- 10. Time and Work
- 11. Speed, Time and Distance
- 12. Problems on Ages
- 13. Basic Algebra
- 14. Area and Volume
- 15. Simple and Decimal Fractions
- 16. Reasoning: Mathematical Operation and Reasoning.
- 17. Analogy, Sitting Arrangement, Blood Relation, Coding –Inserting Missing Term, Logical Sequence of Word.

Suggested Readings:

1. Basic Mathematics- R.S.Agarwal

B.Com. (HONS.): Semester – V Paper code- BCH 5.1: HUMAN RESOURCE MANAGEMENT



Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: The objective of the course is to acquaint students with the techniques and principles to manage human resource of an organisation.

Unit 1: Introduction 13 Lectures

Human Resource Management: Concept and Functions, Role, Status and competencies of HR Manager, HR Policies, Evolution of HRM, HRM vs HRD. Emerging Challenges of Human Resource Management; Workforce diversity; Empowerment; Downsizing; VRS; Human Resource Information System

Unit 2: Acquisition of Human Resource

13 Lectures

Human Resource Planning- Quantitative and Qualitative dimensions; job analysis – job description and job specification; Recruitment – Concept and sources; Selection – Concept and process; test and interview; placement and induction

Unit 3: Training and Development

13 Lectures

Concept and Importance; Identifying Training and Development Needs; Designing Training Programmes; Role-Specific and Competency-Based Training; Evaluating Training Effectiveness; Training Process Outsourcing; Management Development; Career Development.

Unit 4: Performance Appraisal

13 Lectures

Nature, objectives and importance; Modern techniques of performance appraisal; potential appraisal and employee counseling; job changes - transfers and promotions; Compensation: concept and policies; job evaluation; methods of wage payments and incentive plans; fringe benefits; performance linked compensation.

Unit 5: Maintenance 13 Lectures

Employee health and safety; employee welfare; social security; Employer-Employee relations- an overview; grievance-handling and redressal; Industrial Disputes: causes and settlement machinery

Suggested Readings:

- 1. Gary Dessler. A Framework for Human Resource Management. Pearson Education.
- 2. DeCenzo, D.A. and S.P. Robbins, *Personnel/Human Resource Management*, Pearson Education.
- 3. Bohlendar and Snell, Principles of Human Resource Management, Cengage Learning
- 4. Ivancevich, John M. Human Resource Management. McGraw Hill.
- 5. Wreather and Davis. *Human Resource Management*. Pearson Education.
- 6. Robert L. Mathis and John H. Jackson. *Human Resource Management*. Cengage Learning.
- 7. TN Chhabra, Human Resource Management, DhanpatRai& Co., Delhi
- 8. BiswajeetPatttanayak, Human Resource Management, PHI Learning

NeeruKapoor, Human Resource Management, Taxmann Publication



The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70

B.Com. (HONS.): Semester – V Paper code- BCH 5.2: FINANCIAL MANAGEMENT



Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objection: To familiarize the students with the principles and practices of financial management.

COURSE CONTENTS:

UNIT I: (13 Lectures)

Scope and Objective, Time value of money, Risk and return (including Capital Asset Pricing Model). Valuation of securities – Bonds and Equities.

UNIT II: (13 Lectures)

The Capital Budgeting Process, Cash Flow Estimation, Payback Period Method. Accounting Rate of Return, Net Present Value (NPV), Net Terminal Value, Internal Rate of Return (IRR), Profitability Index, Adjusted Discount Rate.

UNIT III: (13 Lectures)

Cost of Capital and Financing Decision: Sources of long- term financing Estimation of components of cost of capital. Methods of calculating cost of equity capital. Cost of retained earnings, Cost of Debt and Cost of Preference Capital, Weighted Average Cost of Capital (WACC) and Marginal Cost of Capital. Capital structure- Theories of Capital structure (Net- Income, Net Operating Income, MM Hypothesis, Traditional Approach): Operating and Financial leverage, Determinants of capital structure

(13 Lectures)

UNIT IV:

Dividend Decision– Theories for Relevance and irrelevance of dividend decision for corporate valuation. Cash and stock dividends, Dividend policies in practice.

UNIT V: (13 Lectures)

Working Capital Decision: Concepts of working capital, the risk- return trade off, source of short- term finance, working capital estimation, cash management, receivables management, inventory management and payable management.

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Suggested Readings:

- 1. Horne. J. C. Van and Wackowich, *Fundamentals of Financial Management*, 9th edition, New Delhi Prentice Hall of India.
- 2. Levy H. and M Sarnat. *Principles of Financial Management*, Engelwood Cliffs, Prentice Hall.
- 3. Johnson, R. W, Financial Management,, Boston Allyn and Bacon
- 4. Joy. O. M. Introduction to Financial Management, Hornewood Irwin.
- 5. Kjan and Jain, *Financial Management, text and problems*, 2nd edition, Tata McGraw Hill New Delhi.
- 6. Pandey, I. M Financial Management, Vikas Publication.
- 7. Chandra P, Financial Management, Theory and practices, (Tata McGraw Hill).
- 8. Rustagi. R. P, Fundamentals of Financial Management, Taxmann Publication Pvt Ltd.
- 9. Singh J. K, *Financial Management, text and problems*, 2nd edition, DhanpatRai and Company, Delhi.
- 10. Singh, Surendra and Kaur, Rajeev, *Fundamentals of Financial Management*, Book Bank International.
- 11. Dr. B.K. Mehta, Dr.KumariAnamika, Mrs.Keya Banerjee; Financial Management, SikshaSagar, Agra.

Note: Latest edition of text books may be used.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70

B.Com. (HONS.): Semester – V

Paper code- BCH 5.3 A: DSE1: BANKING & INSURANCE

Time: 3 Hrs Marks: 100

(End Someston 70 Monks | Mid Someston 30 Monks)

(End Semester 70 Marks + Mid Semester 30 Marks)

Objective: To impart knowledge about the basic principles of the banking andinsurance

Contents

Unit 1: Introduction: 13 Lectures

Origin of banking: definition, banker and customer relationship, General and special types of customers, Types of deposits, Origin and growth of commercial banks in India. Financial Services offered by banks, changing role of commercial banks, types of banks

Unit 2: Cheques and Paying Banker

13 Lectures

Lecture 65 ARP

Crossing and endorsement - meaning, definitions, types and rules of crossing.

Duties, Statutory protection in due course, collecting bankers: duties, statutory protection for holder in due course, Concept of negligence.

Unit3:BankingLending

13 Lectures

Principles of sound lending, Secured vs. unsecured advances, Types of advances, Advances against various securities.

Unit4:InternetBanking

13 Lectures

Meaning, Benefits, Home banking, Mobile banking, Virtual banking, E-payments, ATM Card/ Biometric card, Debit/Credit card, Smart card, NEFT, RTGS, ECS (credit/debit), E-money, Electronic purse, Digital cash.

Unit V: Insurance 13 Lectures

Basic concept of risk, Types of business risk, Assessment and transfer, Basic principles of utmost good faith, Indemnity, Economic function, Types of insurance: Life and Non-life, Reinsurance, Risk and return relationship, Need for coordination. Power, functions and Role of IRDA, Online Insurance

Suggested readings:

- 1. Agarwal, O.P., Banking and Insurance, Himalaya Publishing House
- 2. Satyadevi, C., Financial Services Banking and Insurance, S.Chand
- 3. Suneja, H.R., Practical and Law of Banking, Himalya Publishing House
- 4. Chabra, T.N., Elements of Banking Law, DhanpatRai and Sons
- 5. Arthur, C. and C. William Jr., Risk Management and Insurance, McGraw Hill
- 6. Saxena, G.S; Legal Aspects of Banking Operations, Sultan Chand and Sons
- 7. Varshney, P.N., Banking Law and Practice, Sultan Chand and Sons
- 8. JyotsnaSethi and Nishwan Bhatia, Elements of Banking and Insurance, PHI Learning

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

W. SINGHBHUM JHARKHAND

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70

B.Com.HONS: Semester V

BCH 5.3B: DSE I: E-COMMERCE



Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: A student should become familiar with mechanism for conducting business transactions through electronic means.

Contents:

- Unit I: Introduction: Meaning, nature, concepts, advantages and reasons for transacting online, categories of E- Commerce, Supply Chain Management, and Customer Relations Management.
 10 Lecture
- Unit II: Planning Online- Business: Nature and Dynamics of the internet, pure online vs. brick and click business; assessing requirement for an online business designing, developing and deploying the system, one to oneenterprise.
 13 Lecture
- Unit III: Technology for Online- Business: Internet, IT Infrastructure, Middleware contents: texts and integrating E- Business application.
 10 Lecture
- Unit IV: Mechanism of making payment through internet: Online payment mechanism;
 Electronic payment system; payment gateways; visitor to website; tools for promoting websites;
 Plastic Money; Debit Card, Credit Card.

 10 Lecture
- Unit V: Application in E- Commerce: E- Commerce Application in manufacturing, wholesale, retail and service sector. 13 Lecture
- Unit VI: Security and Legal Aspects of E- Commerce: Threats in E- Commerce, Security of clients and Service- provider; Cyber Law Information Technology Act 2000: An overview of major provisions.
 9 Lecture

Suggested Readings:

- 1. Schnider Gary P. "Electronic Commerce"
- 2. Chatterjee Charles "E- Commerce Law for Small Business"

Note:

- 1. There shall be a practical examination of 30marks (Practical- 15 Marks, Viva 10 Marks and 5 Marks for Attendance).
- 2. The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70

B.Com.HONS: Semester V

BCH 5.4.A: DSE II: E-FILING OF RETURNS

Time: 3 Hrs Marks: 100

(End Samastan 70 Marks: 1 Mid Samastan 2

Lecture 65

(End Semester 70 Marks + Mid Semester 30 Marks)

Objective: To provide the students the conceptual and practical knowledge about electronic filing or returns.

Unit I: Conceptual Framework

15 Lecture

Meaning of e-filing; difference between e-filing and regular filing of returns; benefits and limitations of e-filing. Types of e-filing; e-filing process: relevant notifications.

Unit II: Income tax and E-filing of ITRs

20 Lecture

Introduction to income tax - basic terminology, types of assets, income taxable under different heads, basics or computation or total income and tax liability, deductions available from gross total income, PAN card, due date or filing of income tax return .Instructions for filling out form ITR-1. ITR-2, ITR-3. ITR-4.ITR-4S.ITR-S, ITR-6. Introduction to Income tax Portal: preparation of electronic return (practical workshops)

Unit III: TDS and e-filing of TDS returns

15 Lecture

Introduction to the concept of TDS; provision regarding returns of TDS: types of forms for filing TDS returns; practical workshop one-filing on TDS returns.

Unit IV: GST and E-filing of GST returns

15 Lecture

Introduction to GST, Registration; relevant notifications regarding e-filing of GST returns: steps for preparing GST returns: practical workshop on-filing of GST returns.

Suggested Readings:

I. Ahuja, Girish ..and Gupta. Ravi. Systematic Approach to Income Tax. Bharat Law House. Delhi.

Software's:

I. Excel Utility available at incometaxindiaefiling.com

Note:

- 1. There shall be a practical examination of 30marks (Practical- 15 Marks, Viva 10 Marks and 5 Marks for Attendance).
- 2. The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2	$10 \times 2 = 20$
	Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4	4 x 5 = 20
	have to be answered for 5 marks each.	
C	4 question of long answer (400 words) type, of	$2 \times 15 = 30$
	which 2 have to be answered for 15 marks each.	
	Total	70

B.Com. HONS: Semester V

W. SINGHBHU

BCH 5.4B: DSE II: ENTREPRENEURSHIP

Time: 3 Hrs Marks: 100 Lecture 65

(End Semester 70 Marks + Mid Semester 30 Marks)

Objective:

The objective of this course is to acquaint the students with entrepreneurship and small enterprises management.

Course Inputs:-

Unit-I: Entrepreneurship and its scope, Entrepreneurship as the process, career

option, Need, values, attitude and motivation of entrepreneurs. 13 Lecture

Unit-II: Becoming Entrepreneur, Personal and environmental barriers in

entrepreneurship, Problems and stages for setting up a new venture, Franchising and entrepreneurial experiences, Select case studies of heading

entrepreneurs in India. 13 Lecture

Unit-III: Growth and Development of Small Scale Industries, Definition of small

enterprise and their scope in emerging scenario, Incentives and

concessions, Technology know-how and appropriate technology. 13 Lecture

Unit-IV: Financial and Marketing Management of SSI, Financial planning, long term and

short term credit flows, sources of finance including venture capital, project appraisals and financial institutions. Measures and facilities to SSI for exports,

Legal aspects of SSI. 13 Lecture

Unit-V: Case Study: The list of case studies to be provided in the class. **13 Lecture**

References:

- Desai ,Vasant , Small Scale Industries and Entrepreneurship, Bombay, Himalaya 1995.
- Staley ,E.andMorseyR.Small scale Industries in developing Countries. New York ,McGrow Hill.
- Malhotra I. S and Gupta S.L. Management of Small scale Industries. New Delhi, Galgotia.
- Drucker, Peter F. Innovation and Entrepreneurship, East west Press (P) Ltd., 1992.
- Gupta, C.B and Srinivasan, Entrepreneural Development in India.
- Taneja S and Gupta S.L., Entrepreneur Development New Ventures Creation, Galgotia Publishing Co., 2001.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

W. SINGHBHUM

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	10 x 2 = 20
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70

B.Com. (HONS.): Semester – VI Paper code- BCH 6.1: Goods & Service Tax



Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: To provide knowledge of GST and its practical application in day to day life.

UNIT – I	Introduction: GST Basics, Objective of implementation of GST, Benefits of GST,	
	Component of GST, Important Definitions, Meaning and Scope of Supply. 10 Lecture	
UNIT – II	Levy and Collection of Tax: Tax Liability on Composite and Mixed Supply, Levy and	
	Collection of Tax, Composition Levy, Exemption from Tax. 14 Lecture	
UNIT – III	Valuation of Supply: Valuation of Supply where the consideration is not wholly in	
	money. 14 Lecture	
UNIT – VI	Input Tax Credit: Eligibility and Condition, Apportionment of credit in case of taxable	
	and exempt supply. 12 Lecture	
UNIT – V	Canaral Bracedures: Desistration Amendments and cancellation of registration Toy	
OINII – V	General Procedures: Registration, Amendments and cancellation of registration, Tax Invoice, Credit & Debit Notes, Accounts and Records, Period of retention of	
	accounts, Filing of Returns.	

References:-

- 1. Taxman's GST Ready Reckoner.
- 2. India GST JayaramHiregange Deepak Rao.
- 3. Handbook of GST in India: Concept & Procedures, RakeshGarg&SandeepGarg.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2	$10 \times 2 = 20$
	Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4	$4 \times 5 = 20$
	have to be answered for 5 marks each.	
С	4 question of long answer (400 words) type, of	$2 \times 15 = 30$
	which 2 have to be answered for 15 marks each.	
	Total	70

B. Com (HONS.): Semester – VI Paper code- BCH 6.2: PRINCIPLES OF MARKETING



Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: The objective of this course is to provide basic knowledge of concepts, principles, tools and techniques of marketing.

Contents:

Unit I 11 Lectures

- 1. Introduction: Nature, scope and importance of marketing; Evolution of marketing concepts; Marketing mix, marketing environment.
- **2. Consumer Behaviour** An Overview: Consumer Buying Process, Factors influencing consumer buying decision

Unit II 15 Lectures

- **3. Market Selection:** Market segmentation concept, importance and bases; Target market selection; Positioning concept, importance and bases; Product differentiation vs. market segmentation.
- **4. Product:** Meaning and importance, Product classification; concept of product mix; Branding, packaging and labelling; Product-Support; Product Life-Cycle; New Product Development.

Unit III 12 Lectures

- **5. Pricing: Significance,** Factors affecting price of a product, pricing policies and Strategies.
- **6. Promotion:** Nature and importance of Promotion; Communication process; Types of Promotion: advertising, personal selling, public relations & sales promotion, and their distinctive characteristics; Promotion mix and factors affecting promotion mix decisions.

Unit IV 13 Lectures

- **7. Distribution:** Channels of distribution meaning and importance; Types of distribution channels; Wholesaling and retailing; Factors affecting choice of distribution channel; Physical Distribution.
- **8. Retailing:** Types of retailing store based and non-store based retailing, chain store, specialty stores, supermarkets, retail vending machines, mail order houses, retail cooperatives; management of retailing operations: an overview; Retailing in India: Changing Scenario.

Unit V 14 Lectures

- **9. Rural marketing:** Growing Importance; Distinguishing Characteristics of rural markets; Understanding rural consumers and rural markets; Marketing mix planning for rural markets.
- **10. Recent development in marketing:** Social Marketing, online marketing, direct marketing, services marketing, green marketing.



Suggested Readings:

- **1. Kotler**, Philip, Gary Armstrong, Prafullaagnihotri and Ahsaan UI Haque, *Principles of Marketing*. 13th edition. Pearson Education.
- **2.** Michael, J. Etzel, Bruce J. Walker, William J Stanton and Ajay Pandit. *Marketing Concepts and Cases*. (Special Indian Edition).
- **3.** McCarthy, E. Jerome., and William D. Perreault. *Basic Marketing*, Richard D. Irwin.
- **4.** Lamb, Charles W., Joseph F. Hair, Dheeraj Sharma and Carl McDaniel. *Marketing: A South Asian Perspective*. Cengage Learning.
- **5.** Pride, William M., and D. C Ferell. *Marketing: Planning, Implementation & Control*. Cengage Learning.
- **6.** Majaro, Simon. *The Essence Of Marketing*, Prentice Hall, New Delhi.
- 7. ZIkmund William G. and Michael D'Amico. *Marketing; Creating and Keeping Customers in an E- Commerce World.* Thomson Learning.
- **8.** Chhabra, T. N., and S. K. Grover, *Marketing Management*. Fourth Edition. DhanpatRai&Company.
- 9. The Consumer Protection Act 1986.
- **10.** Iacobucci and Kapoor, *Marketing Management: A south Asean Perspective*. Cengage Learning.

The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	$10 \times 2 = 20$
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70



B. Com (HONS.): Semester – VI Paper code- BCH 6.3.A: DSEIII: NEW VENTURE PLANNING

Time: 3 Hrs Marks: 100 Lecture 65 (End Semester 70 Marks + Mid Semester 30 Marks)

Objective: The curriculum aims at giving exposure to students regarding different aspects of setting up a new business. After completing the course student should be able to develop an understanding of the process of identifying various sources of new business ideas of products and services. The understanding of this paper will help them to examine, evaluate and approach different sources of finance, the nature of marketing effort required and to develop a comprehensive business plan.

Unit I: Starting New Ventures

13 Lectures

Opportunity identification. The search for new ideas. Source of innovative ideas. Techniques for generating ideas. Entrepreneurial imagination and creativity: The role of creative thinking. Developing your creativity. Impediments to creativity. The pathways to New Ventures for Entrepreneurs, Creating New Ventures. Acquiring an established Venture: Advantages of acquiring an ongoing Venture. Examination of key issues. Franchising: How a Franchise works. Franchise law. Evaluating the franchising opportunities.

Unit II: Legal Challenges in Setting up Business

13 Lectures

Intellectual Property Protection: Patents, Trademarks, and Copyrights. Requirements and Procedure for filing a Patent, Trademark, and Copyright. Legal acts governing businesses in India. Identifying Form of Organisation: Sole Proprietorship, Partnership, Limited Liability Partnership and Company.

Unit III: The Search for Entrepreneurial Capital

13 Lectures

The Entrepreneur's Search for Capital. The Venture Capital Market. Criteria for evaluating New-Venture Proposals. Evaluating the Venture Capitalist.

Financing stages. Alternate Sources of Financing for Indian Entrepreneurs. Bank Funding. Government Policy Packages. State Financial Corporation's (SFCs). Business Incubators and Facilitators. Informal risk capital: Angel Investors.

Unit IV: The Marketing Aspects of New Ventures

13 Lectures

Developing a Marketing Plan: Customer Analysis, Sales Analysis and Competition Analysis. Market Research. Sales Forecasting. Evaluation, Pricing Decision.

Unit V: Business Plan Preparation for New Ventures

13 Lectures

Business Plan: Concept. Pitfalls to Avoid in Business Plan.Benefits of a Business Plan.Developing a Well-Conceived Business Plan. Elements of a Business Plan: Executive Summary. Business Description. Marketing: Market Niche and Market Share. Research, Design and Development.Operations.Management.Finances.Critical-Risk. Harvest Strategy. Milestone Schedule.

Suggested Readings:

- 1. Kuratko, D.F., and T. V. Rao, Entrepreneurship: A South-Asian Perspective, Cengage Learning.
- 2. Robert, H. M., Manimala, M. Peters, and D. Shepherd, *Entrepreneurship*, Tata McGraw Hill, India.
- 3. Barringer, B. R., and R. D. Ireland, *Entrepreneurship: Successfully Launching New Ventures*, Pearson Education, India.
- 4. Allen, K.R., Launching New Ventures: An Entrepreneurial Approach, Cengage Learning.

- 5. Hishrich., Peters, Entrepreneurship: Starting, Developing and Managing a New Enterprise
- 6. Ramachandran, K., Entrepreneurship Development, Tata McGraw Hill, India.
- 7. Roy, Rajeev, Entrepreneurship, Oxford University Press.
- 8. Kumar, Arya, Entrepreneurship: Creating and Leading an Entrepreneurial Organization, Pearson, India.
- 9. Holt, David H., Entrepreneurship: New Venture Creation, PHI Learning.
- 10. Nickels, William G; McHugh, James M, and Susan M McHugh; Understanding Business, Tata McGraw Hill.

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The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/	$10 \times 2 = 20$
	Fill in the blanks etc.) consisting 10 question of 2 Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
С	4 question of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	$2 \times 15 = 30$
	Total	70

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B. Com (HONS.):

Semester - VI

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Paper code- BCH 6.3.B: DSEIII: COMPUTERISED ACCOUNTING

Time: 3 Hrs Marks: 100 Lecture 65

(End Semester 70 Marks + Mid Semester 30 Marks)

Objective: To gain knowledge of computer Accounting.

Unit1.	INTRODUCTION: Meaning of Computerized Accounting, Implementation of Accounting Cycle in Computerized Accounting, Old methods and machines used in accounting, Basics of Computerized Accounting, Computerized Processing system, Advantages and disadvantages of using the computer in accounting, Accounting packages: Custom Tailored vs. Standardized packages, single vs. multiple user, Consideration for Selection of a good Accounting package, Top Accounting Software's in the market. 15 Lecture
Unit2.	ORGANIZATION OF ACCOUNTING DATA: Organizing and storing accounting data, Concept of Data processing, Techniques of Storage of Data, Concept of Data Warehouse, The Lifecycle of Data, Concept of Database Archiving, Functions of Accounting, Basics of Accounting Process, Traditional Computerized Accounting Systems: File-Oriented Systems, Designing simple accounting vouchers, Extracting desired accounting information from sources, Database Approach to Accounting Systems.
Unit3.	BASICS FUNDAMENTALS OF ACCOUNTING ANDGENERATING REPORTS: Basics of Accounting ledger, How to write Ledger, Balancing the Accounts, Necessity of Ledger, Differences between Journal and Ledger, Accounting Sub Journals - Cash Book, Basics of Cash Book, Trial Balance, Balance Sheet.(USING ACCOUNTING SOFTWARE) 20 Lecture
Unit4.	EXPOSURE TO ERP: Basics of ERP, Advantages of ERP: ERP accounting and financial modules. 10 Lecture

Suggested Readings:

- 1. Basset P.H. Computerised Accounting.
- 2. Computerised Accounting Combined Text and Workbook by Kaplan A.C

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Note:

- 1. There shall be a practical examination of 30marks (Practical- 15 Marks, Viva 10 Marks and Marks for Attendance).
- 2. The question papers for the End Semester Examination (ESE) may have the following patterns with Total of 8 Questions:-

Part	Particulars	Marks
A	10 Objective Type Questions (MCQ/ True-False/ Fill in the blanks etc.) consisting 10 question of 2	$10 \times 2 = 20$
	Marks each and will be compulsory.	
В	8 short answer (25 words) type question, of which 4 have to be answered for 5 marks each.	4 x 5 = 20
C	4 question of long answer (400 words) type, of	$2 \times 15 = 30$
	which 2 have to be answered for 15 marks each.	
	Total	70

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B.Com.HONS: Semester VI

BCH 6.4: DSEIV: BUSINESS RESEARCH METHODS & PROJECT WORK

Time: 3 Hrs Marks: 100

Objectives: Dissertation exercise helps students to understand the methodology of action research. Students will get research exposure through the process Format for Dissertation

- Identify a research issue
- Formulate the research objectives and a research problem
- Set out a research design
- Plan of action
- Data gathering
- Identify criteria and standards for action research
- Generate evidence from the data
- Make a claim to knowledge
- Link the claim with existing knowledge
- Test the validity of the claim
- Submit the claim to critic
- Explain the potential significance of the research and claim
- Generate theory from the research
- Modify practice in light of the evaluation
- Write a report and disseminate findings

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KOLHAN UNIVERSITY, CHAIBASA P.G Department of Geography



B.A.-1, B.A.,-II & B.A.-III (Hons.) GE/DSC & Compulsory Papers based on CBCS Pattern

2020

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SCHEME FOR CBCS IN B.A. (HONS) PROGRAMME GEOGRAPHY

Semester	Course	Paper	Marks
		-	(Credit)
	CC-1	Introduction to Geography	70 (4)
	CC-2	Geo-Tectonic & Geomorphology	70 (4)
	CC (P)-1	Practical	60 (4)
	AECC-1	English Communication/ MIL	=0
		Communication	50
	CC-3	Contemporary Issues in Geography	70 (4)
	CC-4	Human Geography	70 (4)
	CC (P) -2	Practical	60 (4)
	AECC-2	Environmental Science	50
	CC-5	Climatology and Oceanography	70 (4)
	CC-6	Geography of India	70 (4)
	CC-7	Geography of Jharkhand	70 (4)
	CC (P)-3	Practical	90 (6)
	SEC-1	Emerging Trends in Geography	35 \ (2)
	SEC-1	Internal Assessment/Practical	15J=50
	CC-8	Economic Geography	70 (4)
	CC-9	Environmental Geography	70 (4)
	CC-10	Geography of Travel & Tourism	70 (4)
	CC (P) -4	Practical	90 (6)
	SEC-2	Field Work in Geographical Study	35 \ (2)
	SEC-2	Internal Assessment/Practical	15J=50
	CC- 11	Geography of Asia	70 (4)
	CC-12	Northern Continents	70 (4)
	CC (P) -5	Practical	70 (4)
	DSE-1	Disaster Management	70 (4)
	DSE- (P)-1	Practical	30 (2)
	DSE- 2	Rural Development	70 (4)
	DSE (P)-2	Practical	30 (2)
	CC-13	Bio-Geography	70 (4)
	CC-14	Southern Continents	70 (4)
	CC (P) -6	Practical	60 (4)
	DSE-3	Scientific Research in Geography	70 (4)
	DSE (P) - 3	Practical	30 (2)
	DSE - 4	Project, Viva – Voce	70+30
			=100 (6)

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SCHEME FOR CBCS IN B.A. (HONS) PROGRAMME (GEOGRAPHY) FIRST SEMESTER - TOTAL 20 CREDITS CORE COURSE - 1 (CC-1)

CORE -1 (Theory)

Introduction to Geography

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M.: 70

Module - 1:

Nature and scope of Geography: Geography as a science; place of Geography in the classification of Sciences, concept of space and concept of landscape (Regional cultural).

Module - 2:

Geography in Ancient (Greek, Rome and India) and Medieval period; Development of Geography in Modern Period (German School, French School) Contribution of Humboldt, Ritter, Ratzel, Blache and Hartshorne to Geography.

Module - 3:

Methods and Technique in Geography: Quantitative, Behavioral, Radical, Humanistic and Environmental; Remote Sensing, GIS, GPS and computer cartography, Trends in Renaissance period.

Module - 4:

Geographical knowledge and people : Career in Geography, noted Indian Geographers who contributed to development of India, Man-environment Relationship.

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- 1. Maurya S.D. (2007): Bhoogol Parichay, Sharda Pustak Bhawan, Allahabad.
- 2. Adhikari Sudeepta (2001): Fundamentals of Gegraphical thought, Chaitanya Publishing House, Allahabad.
- 3. Jain M.M. (2012) : Bhowgolik Chintan Evam Vidhitantra, Sahitya Bhawan Publications, Agra.
- 4. Dixit Shrikant (2005) : Bhoogol Ki Prastavna, Vasundhara Prakashan, Gorakhpur.
- 5. Dixit Ramesh Dutt (2007): Bhoogolik Chintan Ka Vikas Ek Aitehasik Samiksha, Prents Hall of India Private Ltd., New Delhi.
- 6. Singh D.P. (2013) : Bhowgolik Chintan Ki Samiksha, Sharda Pustak Bhawan, Allahabad.
- 7. Hussain Majid : Evolution of Geographical thought, Rawat Publications, Jaipur.
- 8. Shrivastaa V.K. (2007) : Bhowgolik Chintan Ke Adhar, Vasundhara Prakashan, Gorakhpur.

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CORE COURSE - 2 (CC-2)



CORE-2 (Theory) GEO-TECTONIC AND GEOMORPHOLOGY

4 Credits (Teaching 4 hours per week and minimum 48 Teaching Hours)

F.M.: 70

Module 1: Geo - Tectonics

Theories of origin of the earth; Geological time scale and related topographic and structural evolution; Isostasy: theories of Airy and Pratt; folds and faults: origin, types and their topographic expressions; plate tectonics, earthquake and vulcanicity.

Module - 2: Geomorphology

General degradation processes: processes of rock weathering and their effects on landform; fluvial processes and land forms; Glacial processes and landforms; fluvio-glacial landforms: Aeolian processes and landforms.

Module - 3 Geomorphology and structure

Basic concepts of geomorphology: landforms on granite and basalt; land forms on limestone; development of river network and land forms on uniclinal and folded structures.

Module - 4: Theories of geomorphology

Normal cycle of erosion by W.M. Davis; views of W. Penck on normal cycle of erosion; Cycle of pediplanation by L.C.King; dynamic equilibrium theory by J.T. Hack.

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Books & Recommended

- 1. Singh Savindra ((1998) : Geomorphology, Prayag Pustak Bhawan, Allahabad.
- 2. Singh Savindra (2012-13) : Bhoo-Akriti Vigyan, Vasundhara Prakashan Gorakhpur.
- 3. Ahmad Enayat (2004): Geomorphology, Kalyani Publishers, New Delhi.
- 4. Dayal P. (2000) : A Text Book of Geomorphology, Shukla Book Depot, Patna.
- 5. Gautam Alka (2009) : Geomorphology, Sharda Pustak Bhawan, Allahabad.
- 6. Prasad Gayatri (2012) : Bhoo Akriti Vigyan, Sharda Pustak Bhawan, Allahabad.
- 7. Sharma Hari Shankar & Kumar Pramila (1997) : Bhoo-Akriti Vigyan, Madhya Pradesh Hindi Granth Academy .
- 8. Thornbury William D. (2002): Principles of Geomorphology, CBS Publishers & Distributors, New Delhi.

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CORE COURSE (P) -1 [CC (P)-1]

PRACTICAL

4 Cre	dits (Teaching 4 hours per week minimum 48 teaching hours)	F.M. 60
1)	Hythergraph and climograph and their interpretation	[10]
2)	Weather maps of India (Published by the Indian Meteorological Department for July and January), Interpretation of weather map.	[10]
3)	Methods of Data Collection & Sampling.	[10]
4)	Statistical Methods : Mean, Median and Mode.	[10]
5)	Note Book + Regularity.	[10]
6)	Viva - Voce	[10]



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- 1. Sharma J.P. (2004): Prayogik Bhoogal, Rustogi Publications, Meerut.
- 2. Singh R.L., Singh Rana P.B. (2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Mamoriya Chaturbhuj & Jain Sheshmal: Man-Chitrankan Evam Prayogik Bhoogol, Sahitya Bhawan, Agra.
- 4. Sarkar Ashish (2015): Practical Geography, A. Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- 5. Singh R.L. & Singh Rana P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatwa, Kalyani Publishers, New Delhi.
- 6. Chauhan P.R. & Surat Ram (1998); Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.

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SECOND SEMESTER - TOTAL 20 CREDITS HARRHAND CORE COURSE -3 [CC-3]

CORE - 3 (Theory)

Contemporary Issues in Geography

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M. 70

Module 1:

Introduction to contemporary issues in geography: Meaning and definition of contemporary issues; Nature of contemporary issues in geography; Importance of study of contemporary issues in geography.

Module 2:

Physical (Geomorphic/Climatic /Oceanic/Biological) issues : causes and effects of

- a) Landslides; Weathering; earthquakes;
- b) Floods; draughts; cyclones; ozone depletion;
- c) Tsunamis; El Nino and La Nina; marine Pollution;
- d) Deforestation; forest fire; epidemics; watershed management.

Module 3:

Human (Population/Economic /Social) Causes and effects of

- a) Over population; migration; Energy Crisis;
- b) Poverty; Regional disparity; Exploitation of resources;
- c) Terrorism; Conflicts due to race, religion and caste; HIV/AIDS; Unemployment.

Module 4:

Modern theme in Geography:

- a) Applied geography, sustainable development.
- b) Climate change, global warming international efforts and response.
- c) Basic indicators of human and gender development; social inequality as constraint of development.
- d) Population growth, malnutrition, food security and hunger, morbidity and mortality.

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- 1. Hanks Revel R. (1993) : Contemporary Issues in Geography, Oklahoma State University, US.
- 2. Hegi P.S. (2010-2011) : Paristhitiki Evam Peryavaran Bhoogol, Rustogi Publications, Meerut.
- 3. Dhaliwal G.S. Sangha G.S., Ralhan P.K. (1998): Fundamentals of Environmental Science, Kalyani Publishers, New Delhi.
- 4. Garg H.S.: Contemporary Issues in Geography (भुगोल में समकालीन मुद्दे) SB PD Publications.
- 5. Melvin Album : Geography and Contemporary Issues : Studies of relevant problems.
- 6. Singh Savindra (2003): Environmental Geography (Peryavaran Bhoogol in Hindi) Prayag Pustak Bhawan, Allahabad.
- 7. Gautam Alka (2015) : Sansadhan Evam Peryavaran, Sharda Pustak Bhawan, Allhabad.

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CORE COURSE -4 [CC-4]

CORE - 4 (Theory)

Human Geography

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M. 70

Module 1:

Meaning, nature and scope of Human Geography; Concept of Human Geography; Man-Environment relationship; determinism, possiblism and neodeterminism.

Module 2:

Evolution of man; Classification & characteristics of races and their broad distribution; Human adaptation to environment: Eskimo, Masai and Bushman; Primitive people of Jharkhand: Santhal, Oraon and Munda.

Module 3:

Growth of population; Distribution of population; Major human agglomerations; Types of migration; Trends of Urbanization.

Module 4:

Rural settlements : characteristics, types and regional pattern: Urban settlements ; evolution and classification ; Rural houses in India: Types classification and regional pattern.



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- 1. Kaushik S.D. (2005-2006): Manav Bhoogol, Rustogi Publications, Meerut.
- 2. Maurya S.D. (2010): Manav Bhoogol, Sharda Pustak Bhawan, Allahabad.
- 3. Singh B.N. (2006): Manav Bhoogol, Prayag Pustak Bhawan, Allahabad.
- 4. Singh L.R. (2009): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad.
- 5. Hussain Majid (2012): Human Geography, Rawat Publications, Jaipur.
- 6. Negi Balbir Singh (1985-1986): Human Geography An Ecological Approach, Kedar Nath Ram Nath, Meerut.
- 7. Gurjar Ramkumar & Jat B.C. (2004): Manav Bhoogal, Punchsheel Prakashan, Jaipur.
- 8. Rao B.P. & Shrivastava V.K. (2007) : Manav Bhoogol, Vasundhara Prakashan, Gorakhpur.

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CORE COURSE (P) -2 [CC (P)-2]



PRACTICAL

4 Cre	dits (T	eaching 4 hours per week minimum 48 teaching hours)	F.M. 60
1)	•	nstruction of Scale : Simple, Diagonal and Comparative mple Cartograms, Bar, Pie, Dot	[10]
2)	Study	y of Topographical maps of India of Hilly and plain areas in ect :	[15]
	i) ii) iii) iv)	Relief Drainage Settlement Communication Transportation & Communication.	
3)	Clima	atic Diagram :	[15]
	i)	Simple Wind Rose Diagram	
	ii)	Compound Wind Rose Diagram	
4)	Note	Book + Regularity	[10]
5)	Viva-	Voce	[10]



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- 1. Sharma J.P. (2004): Prayogik Bhoogal, Rustogi Publications, Meerut.
- 2. Singh R.L., Singh Rana P.B. (2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Mamoriya Chaturbhuj & Jain Sheshmal: Man Chitrankan Evam Prayogik Bhoogol, Sahitya Bhawan, Agra.
- 4. Sarkar Ashish (2015): Practical Geography, A. Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- 5. Singh R.L. & Singh Rana P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatva, Kalyani Publishers, New Delhi.
- 6. Chauhan P.R. & Surat Ram (1998); Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.

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THIRD SEMESTER-TOTAL 26 CREDITS W. SINGHBHUM FROM CORE COURSE (P) -5 [CC -5]

CORE -5 (Theory)

Climatology and Oceanography

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M. 70

Module - 1:

Atmosphere – Structure, composition: Insolation, Heat Balance, inversion of temperature, Factors affecting the horizontal distribution of temperature atmospheric pressure – Vertical and horizontal distribution.

Module - 2:

Wind – General Circulation, Planetary winds, Seasonal winds. Air masses, Fronts, jet stream, Koppen's climatic classification, Factors of climate change.

Module - 3:

General distribution of land and sea hypsographic curve, Zones of ocean bottom accounting to depth, continental slope, deep sea plain & ocean deeps. Bottom relief of Atlantic & Indian oceans, horizontal & vertical distribution of temperature in ocean oceanic routes.

<u>Module - 4 :</u>

Composition of sea water – Salinity – horizontal distribution in open ocean, Enclosed & partially enclosed sea. Oceanic circulation, factors controlling oceanic circulation in Atlantic & Indian oceans.

Waves & tides : Types of waves & tides, Ocean deposits; terrigenous & pelagic deposits, distribution; coral reefs.

Quahle

ACTING PRINCIPAL

ST. AUGUSTINE'S COLLEGE

MANOHARPUR, W SINGHBHUM



- 1. Singh Savindra (2015): Jalvayu Vigyan, Pravalika Publication, Allahabad.
- 2. Singh Savindra (2012): Climatology, Prayag Pustak Bhawan, Allahabad.
- 3. Critchfield Howard J.(1995): General Climatology, Prentice Hall of India, New Delhi.
- 4. Lal D.S. (2002): Jalvayu Vigyan, Sharda Pustak Bhawan, Allahabad (Book in Hindi English both)
- 5. Lal D.S. (2010): Oceanography, Sharda Pustak Bhawan, Allahabad. (Book in Hindi & English both)
- 6. Singh Savindra (2011) : Oceanography, Prayag Pustak Bhawan, Allahabad. (Book in Hindi & English both)
- 7. Siddhartha K. (2009): Oceanography, A Brief Introduction, Kisalaya Publications Pvt. Ltd., New Delhi.
- 8. Sharma R.C. & Vatal M. (2009); Oceanography, Chaitanya Publishing House, Allahabad.

Quahlo

ACTING PRINCIPAL
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MANOHARPIJE W SINGHBHUM

CORE COURSE - 6 (CC-6)



CORE -6 (Theory)

Geography of India

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M. 70

Module - 1:

India; structure and physiography, drainage (peninsular and extra peninsular), Origin of Monsoon and climatic regions. Edaphic and biotic regions of India; Indian forests and their economics importance.

Module - 2:

Agriculture system in India, cropping pattern, divide India into intensive agricultural regions (as per ICAR); green revolution and its consequences industries: cotton, sugar, mineral based: iron and steel, cement, industries, transport; surface, water and air.

Module - 3:

Minerals : distribution of iron ore, bauxite, manganese, atomic minerals, power resource – coal, petroleum, wind energy in India.

Region of geography : Middle Ganga plain, Lower Ganga plain, Chhotanagpur plateau.

Module - 4:

Studies of Geographical problems

Problems of unrealiability or rainfall; problem of soil erosion and its mitigation; problems of development (land acquisition), displacement and rehabilitation; problem of slum and urban rehabilitation in India.

Quahle

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE



- 1. Mamoria Chaturbhuj Evam Mahato Bhoopal Kumar (2010) : Bharat Ka Bhoogol, Jharkhand Ka Pradeshik Bhoogol Sahitiya Publications, Agra.
- 2. Chauhan V.S. & Gautam Alka (2003-2004): Bharat, Bharatvarsh Ka Vistrit Bhoogol, Rustogi Publication, Meerut.
- 3. Khullar D.R. (2006): India, A comprehensive Geography, Kalyani Publishers, New Delhi (In Hindi & English both)
- 4. Gautam Alka (2013) : Bharat Ka Brihad Bhoogol , Sharda Pustak Bhawan, Allahabad.
- 5. Sharma T.C. (2013): Economic Geography of India, Rawat Publications, Jaipur.
- 6. Singh Gopal (2007): Bharat Ka Bhoogol (Geography of India), Atmaram and Sons, Delhi (In Hindi & English both)
- 7. Mamoria C.B.: Economic & Commercial Geography of India, Shivalal Agarwal & Company, Agra.
- 8. Tiwari R.C. (2012) : Bharat Ka Bhoogal, Prayag Pustak Bhawan, Allahabad.

Quahlo

ACTING PRINCIPAL
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MANOHARPIJR W SINGHBHUM

CORE COURSE - 7 (CC-7)



CORE -7 (Theory)

Geography of Jharkhand

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M. 70

Module - 1:

Structural and Relief, drainage pattern, forest resources and its economic importance.

Module - 2:

Agriculture: irrigation, types and distribution, major crops;

Population: growth, distribution & density;

Population composition: age & Sex ratio, rural-urban.

Module - 3:

Resources: natural resource: soil, water, mineral resources: (Coal, uranium)

Distribution and development, conventional and non-conventional energy resources, major hydel power projects – thermal power plants.

Module - 4:

Educational development and structure of education in Jharkhand. House types of tribal villages in south Chhotanagpur.

Transport: Roads and Railways and development of tourism, eco-tourism in Jharkhand.

Economy and habitats of Santhal, Oraons & Munda.

Social, economic and environmental problems of Jharkhand.

Quahla

ACTING PRINCIPAL
T. AUGUSTINE'S COLLEGE



- 1. Singh Sunil Kumar (2014): Jharkhand Paridrishya, Crown Publications, Ranchi.
- 2. Singh Sunil Kumar (2005): Inside Jharkhand, Crown Publications, Ranchi.
- 3. Tiwari Ram Kumar (2009) : Jharkhand Ka Bhoogol, Rajesh Publications, New Delhi.
- 4. Kumar Shyam (2004) : Jharkhand : Ek Vistrit Adhyayan, Safal Prakashan, New Delhi.
- 5. Sinha V.N.P. & Singh L.K.P. (2003): Jharkhand Land and People, Rajesh Publications, New Delhi.
- 6. Oraon Prakash Chandra (2003): Land and people of Jharkand, Jharkhand Tribal Welfare Research Institute, Ranchi.
- 7. Sharma Bimla Charan & Vikram Kirti (2006): Jharkhand Ki Janyatiyan, Crown Publications, Ranchi.
- 8. Mahto Bhoopal Kumar (2005) : Jharkhand Ek Adhyayan, Sahitya Bhawan Publications, Agra.

Quahle

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIJR, W SINGHBHUM



CORE COURSE (P) - 3 [CC (P)-3]

PRACTICAL

6 Credits (Teaching 6 hours per week minimum 48 teaching hours) F.M.90

1)	History & Techniques of Cartography		[10]
2)	Map Projection :		[20]
	i) ii) iii)	Cylindrical equal – Area and equidistance. Zenithal Equal – Area and Equidistance. Conical projection with one and two standard Parallels.	
3)	Instrumental Survey :		
	i) ii)	Plane Table Survey: Radiation and intersection Prismatic Compass Survey: Open and Close Traverse.	
4)	Lore	nz Curve, Poly Linear Graph, Triangular Diagram	[20]
5)	Note Book + Regularity		[15]
6)	Viva – Voce		[15]



ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM



- 1. Sharma J.P. (2004): Prayogik Bhoogol, Rustogi Publications, Meerut.
- 2. Singh R.L. & Singh P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatva, Kalyani Publishers, New Delhi.
- 3. Singh Gopal: Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
- 4. Kanetkar T.P. & Kulkarni S.V. (1993) : Surveying and Levelling, Pune Vidyarthi Griha Prakashan, Pune.
- 5. Sarkar Ashis (2015): Practical Geography a systematic approach, orient Blackswan Pvt. Ltd., New Delhi.
- 6. Singh R.L. & Singh P.B.(2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 7. Chauhan P.R. & Surat Ram (1998) : Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.
- 8. Mamoria Chaturbhuj and Jain Shesmal; Man Chitrankan Evam Prayogik Bhoogol, Sahitya Bhawan, Agra.

Quahlo

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THIRD SEMESTER SEC-1



EMERGING TRENDS IN GEOGRAPHY

F.M.: 35

Module -1:

Progress in physical Geography: Progress in Geomorphology, recent advances in meteorology and Climatology.

Module - 2:

Progress in Human Geography: Recent advances in Population Geography, Rural Settlements and development, Progress in transport Geography.

Module - 3:

Health Pathology and well being: Definition, Linkages with environment, Diseases and their regional pattern, Health hazards and Biotic treatments.

Internal Assessment/ Practical

- 1. Project work/Report on a relevant topic from the prescribed syllabus allotted by the HOD. [10]
- 2. Viva Voce based on project work. [05]

Quahle

ACTING PRINCIPAL

T. AUGUSTINE'S COLLEGE



- 1. Deo Sunil (2011) : Bhoo-Akriti Vigyan, Vishva Bharti Publications, New Delhi.
- 2. Maurya S.D. (2010): Manav Bhoogol, Sharda Pustak Bhawan, Allahabad.
- 3. Maurya S.D. (2013) : Jansankhya Bhoogol, Sharda Pustak Bhawan, Allahabad.
- 4. Dixit Ramesh Dutt (2007): Bhowgolik Chintan Ka Vikas, Prentis Hall of India Pvt. Ltd., New Delhi.
- 5. Smch Michael, Elisabeth D.R. and Margaret Carrel (2017): The Guilford Press, New Yark London.
- 6. Ojha N.N. & Singh Sanjay Kumar : Vaikalpik Bhoogal, Cronikal Publications (Pra) Ltd.

Quahle

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
WANOHARPIJR, W SINGHRHUM

FOURTH SEMESTER - TOTAL 26 CREDITS CORE COURSE - 8 (CC-8)

CORE - 8 (Theory)

Economic Geography

6 Credits (Teaching 6 hours per week minimum 48 teaching hours) F.M.70

Module - 1:

Meaning and approach to Economic geography; main concept of Economic Geography; Resources: Concept and Classification; resource conservation.

Module - 2:

Natural resources: soil, forest and water; mineral resources: iron ore and bauxite: power resources: Coal and petroleum; principal crops: wheat, rice and cotton.

Module - 3:

Agricultural regions of the world (whittlesey); theory of agriculture location (Von thunen); Theory of industrial location (weber); major industries: iron and steel, and cotton textiles.

Module - 4:

World transportation: Major trans-continental railways and sea routes; WTO and International trades; patterns and trends; major trade blocks: ECC, ASEAN; Effect of Globalization on development of countries.

Quahlo

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE



- 1. Gautam Alka (2017) : Aarthik Bhoogol Ke Mool Tatva, Sharda Pustak Bhawan, Allahabad.
- 2. Guha J.K. & Chattoraj P.R. (2001): A new approach to Economic Geography, the World Press Pvt.Ltd. (Cacutta) Kolkata.
- 3. Mamoria Chaturbhuj & Sharma B.L. (2012) : Aarthik Bhoogol , Sahitya Bhawan Publications, Agra.
- 4. Saxena H.M. (2013): Economic Geography, Rawat Publications, Jaipur.
- 5. Roy Prithwish *2017): Economic Geography, A Study of Resources, New Central Book Agency (P) Ltd., London.
- 6. Hartshorn Truman A. & Alexander John W. (2005) Economic Geography, Prentice Hall of India Pvt. Ltd., New Delhi.
- 7. Jain P.: Aarthik Bhoogol Ki Samiksha, Rustogi Publications, Meerut.
- 8. Singh Kashi Nath & Siddiqui A.R. (2012): Economics Geography, Prayag Pustak Bhawan, Allahabad.

Quahlo

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MANOHARPIJR, W SINGHBHUM

CORE COURSE - 9 (CC-9)

CORE – 9 (Theory)

Environmental Geography

4 Credits (teaching 4 hour per week and minimum 49 teaching hours)

F.M.7

Module: 1

Definition and scope of Environmental geography; meaning and components of environment.

Module: 2

Ecology, Eco-System and soil system:

- i) Definition and scope of ecology
- ii) Meaning, types, structure, component and functioning of eco-system.
- iii) Meaning and components of soil system.

Module: 3

Environmental degradation and pollution

- i) Meaning and causes of environmental degradation.
- ii) Meaning, sources and causes of air and water pollution.

Module: 4

Environmental issues

- i) Depletion of ozone layer, ecological significance of ozone, protection of ozone layer.
- ii) Acid rain causes and effects.
- iii) A detailed account of the concept of global warming, environmental programmes and policies global, national and local levels.

Quahle

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
MANOHARPIJR W SINGHRHUM

- 1. Singh Savindra (2003) : Environmental Geography Prayag Pustak Bhawan, Allahabad, (In Hindi & English both) (In Hindi Paryavaran Bhoogal)
- 2. Daliwal G.S.; Sangha G.S. & Ralhan P.K. (1998): Fundamentals of Environmental Science, Kalyani Publishers, New Delhi.
- 3. Negi P.S. (2010-2011) : Paristhitiki Evam Paryavaran Bhoogol, Rustogi Publications, Meerut.
- 4. Saxena H.M. (2004): Environmental Geography, Rawat Publications, Jaipur.
- 5. Prasad Gayatri & Nowtiyal Rajesh (2012) : Paryavaran Bhoogol, Sharda Pustak Bhawan, Allahabad.
- 6. Chandna R.C. (2006): Environmental Geography, Kalyani Publishers, New Delhi.
- 7. Tiwari Ram Kumar : Paryavaran Adhyayan, Laxmi Publications (Pra.) Limited, Ranchi.
- 8. Siddhartha K. (2013): Ecology & Environment, Kisalaya Publications Pvt. Ltd., New Delhi.

Quahle

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM

CORE COURSE - 10 (CC-10)

CORE - 10 (Theory)

Geography of Travel and Tourism

4 Credits (teaching 4 hour per week and minimum 49 teaching hours) F.M.70

Module: 1

Nature and scope: definition and nature; scope and extent; concept of tourism – factors affecting tourism development- physical & cultural.

Module: 2

Classification of tourism:

- (A) National, International, Domestic
- (B) Time of travel long haul, holiday tourists, day trippers.
- (C) Travel distance: Global, continental, regional and local.
- (D) Number of tourists individual, groups.
- (E) Purpose Recreation, heritage, nature, religious, health, sports.

Role of Accommodation in tourism:

Accommodation types

- 1. Hotels, motels, inn, Saraies, dharamshala.
- 2. Govt. accommodation, tourism homes.
- 3. Youth hostels, cottages, tents, caravans
- 4. Rail Yatribhavan, House Boats.
- 5. Private accommodation and unrecognized accommodations.

Module - 3

Role of transportation in tourism

- (A) Mode of transportation Air, Road, Rail, Waterways.
- (B) Agencies and Guides -
- 1) World organization, national organizations.
- 2) Private agencies national, international
- 3) Role of guides in tourism.
- 4) Licensing and re-organization of guides.
- 5) Training programme of guides.

Impact of tourism: (A) economic impact (B) physical and environmental impacts (C) socio-culture impacts.

Quahle

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
MANOHARPUR, W SINGHRHUM

Module - 4



Development and planning:

- (A) Levels of planning: international level planning, national level planning, Regional and Local Planning.
- (B) Tourism Planning in India
 - a) Development of tourism in India and Jharkhand
 - b) Tourism Policies of India and Jharkhand.

Case studies of major tourist centers of Jharkhand (at least four major tourist Centers)

Books recommended:-

- (1) Kapur Bimal Kumar (2012) : Prayatan Bhoogol, Vishwa Bharti Publications, New Delhi.
- (2) Prasad Kamla & Sraban Prasenjit, Tourism in Jharkhand, Rajesh Publications, New Delhi.
- (3) Pathan A.M. Thigale S.S. (2000): Contributions to Enviornmental Geo-Science, Aravali Books International (P) Ltd., New Delhi.
- (4) Srivastava V.K. & Rao B.P. (2010) Paryavaran Aur Paristhitiki, Vasundhara, Gorakhapur.
- (5) Mamoria Chaturbhuj & Singh Komal; Paryatan Ka Bhoogol, SBPD Publications, Agra.
- (6) Mamoria Chaturbhuj & Singh Komal : Yatra Evam Paryatan Ka Bhoogol SBPD Publications, Agra.
- (7) Baghla Sunil: Tourism Geography.

Quahla

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
MANOHARPIJR W SINGHBHUM

CORE COURSE (P) - 4 [CC (P) - 4]



PRACTICAL

6 Credits (Teaching 6 hours per week minimum 48 teaching hours) F.M.:90

1) Types of Cartographic symbols and their uses: [15] i) Points (dots, proportional, circles and spheres diagram). ii) Line - Isopleths Area - Choropleth Representing population, agriculture, industry iii) and transport data representing of population (distribution, density, growth); land use and cropping pattern. 2) Statistical Method: [15] i) Quartiles, Deciles, Percentiles ii) Measures of dispersion or variation: Mean deviation, Standard deviation. 3) Geographical Excursion of any part of India & preparation of [30] environmental report of visited area. The study should include the characteristics of land form, climate, drainage, land use, economic activities, settlements. 4) Note Book + Regularity [15]

Quahlo

Viva - Voce

5)

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
MANOHARPIJR W SINGHBHUM

[15]

- 1. Sharma J.P. (2004): Prayogik Bhoogol, Rustogi Publications. Meerut
- 2. Singh R.L. & Singh P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatva, Kalyani Publishers, New Delhi.
- 3. Singh Gopal: Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
- 4. Kanetkar T.P. & Kulkarni S.V. (1993) : Surveying and Levelling, Pune Vidyarthi Griha Prakashan, Pune.
- 5. Sarkar Ashish (2015): Practical Geography a systematic approach, orient Blackswan Pvt. Ltd., New Delhi.
- 6. Singh R.L. & Singh P.B.(2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 7. Chauhan P.R. & Surat Ram (1998) : Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.
- 8. Mamoria Chaturbhuj and Jain Shesmal; Man Chitrankan Evam Prayogik Bhoogol Sahitya Bhawan, Agra.

Quahlo

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIJR, W SINGHBHUM

FOURTH SEMESTER

SEC -2

FIELD WORK IN GEOGRAPHICAL STUDY

F.M.: 35

F.M.: 15

Module: 1

Field work in Geographical study: Historical development of field work in Geography, Data and Ethics of field work, Defining the field and identifying the case study – Rural, Urban, Physical, Human and Environmental.

Module: 2

Field Technique: Merits, Demerits and selection of the appropriate technique observation, Questionnaire, interview, space surveying or other techniques.

Module: 3

Designing the field report : Aims objectives, methodology analysis interpretation and writing the report

Internal Assessment / Practical

Field Survey

- 1. The students have to prepared a project work based on a comprehensive field survey of an area with specific problems allotted by the HOD.
- 2. Viva Voce based on project work.

Quahle

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
MANOHARPIJR W SINGHRHUM

- 1. Sinha M.M.P. & Bala Seema (2012): Uchh Cartography, Sharda Pustak Bhawan, Allahabad.
- 2. Sharma J.P. (2004): Prayogik Bhoogal, Rustogi Publications, Meerut.
- 3. Saha Pijushkanti & Basu Partha (2011) : Advanced Practical Geography, Books and Allied (P) Ltd., Kolkata.
- 4. Ray Parasnath & Ray C.P. (2012-13) : Ansandhan Parichay, Laxmi Narayan Agarwal, Agra.
- 5. Bajpayee S.R. (2002): Samajik Ansandharn Tatha Servekshan, Kitab Ghar, Kanpur.
- 6. Fariya B.R. (2012) : Shodh Padhhatiyan, Sahitya Bhawan, Publications, Agra.

Quahla

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM

FIFTH SEMESTER - TOTAL 24 CREDITS

CORE COURSE - 11 (CC-11)

CORE - 11 (Theory)

Geography of Asia

4 Credits (Teaching 4 hours per week and minimum 48 teaching hours) F.M. 70

Module - 1:

Significance of Geographical Location: Physiography, Climate, Drainage System; major forests type; Soil types and Classification.

Module - 2:

Agricultural Production: Rice and Wheat, Rubber, Tea and Coffee, Sugar Cane Jute.

Mineral and Energy Resources: Iron Ore, Manganese, Tin, Bauxite, Coal, Petroleum and Natural Gas.

Module - 3:

Industrial Production and Distribution : Iron and Steel, Cotton Textile and Automobile.

Transport: Major Road, Railway, Waterways, Airways and Pipeline Networks.

Module - 4:

Population: Distribution, Density, Growth and Population Problem.

Functions and Importance: ASEAN, SAARC, AFTA and OPEC.

Quahle

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ST. AUGUSTINE'S COLLEGE



- 1. Mamoria Chaturbhuj (1999) : Asia Ka Bhoogol, Sahitya Bhawan Publishers, Agra.
- 2. Stamp L. Dudley, (1967): Asia A Regional and Economic Geography, B.I. Publications Pvt Ltd., New Delhi.
- 3. Rao B.P. & Statpathi D.P. (1997) : Asia Ki Bhowgolik Samiksha, Vasundhara Prakashan, Gorakhpur.
- 4. Stamp L. Dudley (1974): Asia Ka Bhoogol, Central Book Dipo, Allahabad.
- 5. Rao B.P. & Sharma Nagendra Kumar (2008): Vishva Ka Chetriya Bhoogol, Vassundhara Prakashan, Gorakhpur.
- 6. Mamoriya Chaturbhuj & Maheshvari Deepak (2012) : Vishva Ka Pradeshik Bhoogol, Sahitya Bhawan, Publications, Agra.
- 7. Manku Singh Darshan (2010) : A Regional Geography of the World, Kalyani Publishers, New Delhi.
- 8. Singh Devendra Prasad & Kumari Poonam (2018): Adhunik Asia Ka Brihad Bhoogol, Sharda Pustak Bhawan, Allahabad.

Quahlo

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CORE COURSE - 12 (CC-12)

CORE - 12 (Theory)

Northern Continents

4 Credits (Teaching 4 hours per week and minimum 48 teaching hours) F.M. 70

Module - 1:

North America: Relief of North America, Natural Vegetation, Population of North America, Cotton Textile Industry and Iron – Steel Industry.

Module - 2

Europe: Physiographic division of Europe, Climate, Demographic pattern of Europe, Industrial Development and regions, Inland waterways of Europe.

Module - 3

Industrial region of Japan, Fruit Cultivation around Mediterranean Sea, Trans-Siberian Railway, Panama Canal Route, Suez Canal Route.

Module - 4

Location of Iron and Steel Industry in U.S.A. and U.K., Wheat belt of Columbia basin, Coal resources of Europe, Regional Study of New England Region & British Isles.

Quahlo

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- 1. Sharma Banvari Lal & Sharma N. Kumar (1979): Uttari America, Shivlal Agarwal and Company, Agra.
- 2. Mamoria Chaturbhuj & Jain S.M. (1990-): Bharat Evam Uttari America, Sahitya Bhawan, Agra.
- 3. Shrivastava. V.K. & Shrivastava Kum Kum Rani (1998) : Sanyuktt Rajya America Ka Bhowgolik Swaroop, Vasundhara Prakashan, Gorakhpiur.
- 4. Saxena Hari Mohan, Saxena Rahul & Saxena Puja (2006-2007): Vishva Ka Pradeshik Bhoogol, Rustogi Publicatiouns, Meerut.
- 5. Mamoria Chaturbhuj & Maheshwari Deepak (2012) : Vishva Ka Pradfeshik Bhoogol, Sahitya Bhawan Publications, Agra.
- 6. Tikka R.N., Bali P.K. & Sekhon M.S. (2005): World Regional Geography, New Academic Publishing Co., Jalandhar.
- 7. Tiwari Vishvanath : Asia Ka Bhowgolik Suaroop, Shivlal Agarwal and Company, Agra.
- 8. Mamoria Chaturbhuj (1999) : Asia Ka Bhoogol, Sahitya Bhawan Publications, Agra.

Quahlo

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CORE COURSE (P) - 5 [CC (P) - 5]



PRACTICAL

4 Credits (Teaching 4 hours per week minimum 48 teaching hours) F.M.60

1) Map Projection: [20] Sinusoidal - Simple and Interrupted i) ii) Conical: Polyconic and Bonne's iii) Cylindrical - Gall's and Mercators. 2) Construction of Geological Cross Section of Simple Geological maps and their Interpretation. [10] 3) Drawing of Profiles: Serial, Composite, Projected & superimposed [10] 4) Note Book + Regularity [10] 5) Viva - Voce [10]

Quality

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
MANOHARPIJR, W SINGHRHUM

- 1. Sharma J.P. (2004): Prayogik Bhoogol, Rustogi Publications, Meerut.
- 2. Singh R.L. & Singh P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatva, Kalyani Publishers, New Delhi.
- 3. Singh Gopal: Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
- 4. Kanetkar T.P. & Kulkarni S.V. (1993) : Surveying and Levelling, Pune Vidyarthi Griha Prakashan, Pune.
- 5. Sarkar Ashis (2015): Practical Geography a systematic approach, orient Blackswan Pvt. Ltd., New Delhi.
- 6. Singh R.L. & Singh P.B.(2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 7. Chauhan P.R. & Surat Ram (1998) : Prayogatmak Bhoogol Vasundhara Prakashan, Gorakhpur.
- 8. Mamoria Chaturbhuj and Jain Shesmal; Man Chitrankan Evam Prayogik Bhoogol Sahitya Bhawan, Agra.

Quahle

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DISCIPLINE SPECIFIC ELECTIVE -1 (DSE-1

THEORY

Disaster Management

4 Credits (Teaching 4 hours per week minimum 48 teaching hours) F.M.70

Module - 1:

Disasters : definition and concepts : hazards, disasters, risk and vulnerability; classification.

Module - 2:

Disaster in India: (A) flood: Causes, impact, distribution and mapping; landslide: causes, impact, distribution and mapping; Drought: causes, impact, distribution and mapping.

Module - 3:

Disaster in India: (B) earthquake and tsunami: Causes, impact, distribution and mapping; Cyclone: causes, impact, distribution and mapping; Manmade disasters causes, impact, distribution and mapping.

Module - 4

Responses and mitigation to disasters: mitigation and preparedness, NDMA and NIDM; indigenous knowledge and community-based disaster management; do's and don'ts during disasters.

Quahle

ACTING PRINCIPAL

ST. AUGUSTINE'S COLLEGE
MANOHARPUR, W SINGHBHUM



- 1. Singh Savindra & Singh Jeetendra (2013) : Disaster Management, Pravalika Publications, Allahabad.
- 2. Garg H.S. (2015): Aapda Prabandhan, S.B.P.D Publications, Aapda.
- 3. Mondal Debabrata & Basu Debabrata (2020): Disaster Management Concept and Approaches, CBS Publishers and Distributors.
- 4. Shukl Chandra Prakash (2019) : Apada Prabandhan, Aavishkar Publishers.
- 5. Sharma Varun Dutt Pandey SK & Sharma Vimal Kumar : Environmental Education and Disaster Management, CBS Publishers and distributors.
- 6. Sharma S.C. (2018): Disaster Management, Khanna Books Publisher.
- 7. Burnval Mahesh Kumar : Apapda Avam Apda Prabhandhan, Cosmos Publication.
- 8. Singh Savindra (2003) : Paryavaran Bhoogol, Prayag Pustak Bhawan, Allahabad.



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DISCIPLINE SPECIFIC ELECTIVE P-1 (DSE-P)

PRACTICAL

2 Credits (Teaching 4 hours per week minimum 24 teaching hours) F.M. =30

- 1) Project Work / Report on relevant topics pertaining to disaster management, Preferable on any major disaster in the world (natural or manmade) [15]
- 2) Project: File + Regularity [10]
- 3) Viva Voce [05]

Quahlo

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DISCIPLINE SPECIFIC ELECTIVE -2 (DSE-2)

THEORY

Rural Development

4 Credits (Teaching 4 hours per week minimum 48 teaching hours) F.M.70

Module - 1:

Defining development: Inter-dependence of Urban and rural sectors of the Economy, need for rural development, Ghandhian concept of rural development.

Module - 2:

Rural economic base : agriculture and allied sectors, seasonality and need for expanding non-farm activities.

Module - 3:

Area based approach to rural development : drought prone area progammes, PMGSY.

Module - 4

Target group approach to rural development: SJSY (Integrated rural development programme). Provision of services physical and socio-economic access to elementary education and primary health care and micro credit.

Quahlo

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- 1. Singh Katar (2011): Gramin Vikas, Rawat Publications.
- 2. Singh Dharmendra (2017): Panchayati Raj Evam Gramin Vikas, Rawat Publications.
- 3. Singh Katar & Shishodia Anil (2011) : Gramin Vikas : Siddhant, Neetiyan Evam Prabandh Rawat Publications.
- 4. Swami HR & Gupta B.P.: Gramin Vikas & Sahkarita, RBD Publication, Jaipur.
- 5. Patel Rajesh: Gramin Vikas Ki Rooprekha, Rawat Prakashan.
- 6. Babel Basanti Lal (2020) : Panchayati Raj Evam Gramin Vikas Yojnayen, Rajasthan Hindi Granth Academy Publisher.
- 7, Chand Mahesh & Puri Vinay Kumar (1990): Regional planning in India, Allied Publishers Limited, New Delhi.
- 8. Chand R.C. (2013): Pradeshik Niyojan Tatha Vikas, Kalyani Publishers, New Delhi.



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DISCIPLINE SPECIFIC ELECTIVE P-2 (DSE P2)

PRACTICAL

2 Credits (Teaching 4 hours per week minimum 24 teaching hours) F.M. =30

- 1) Project work /report on relevant topics pertaining to rural
 Development in India, preferable, on any flagship programme of the
 Government of India or the state government (Jharkhand) [15]
- 2) Project File + Regularity [10]
- 3) Viva Voce [05)

Qualle

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM SIXTH SEMESTER - TOTAL 24 CREDITS

CORE COURSE - 13 (CC-13)

CORE -13 (Theory)

Bio Geography

STINA

4 Credits (Teaching 4 hours per week minimum 48 teaching hours) F.M.: 70

Module: 1

Definition, Scope & importance of Bio-Geography and its relation with other sciences, development of Bio-Geography – View of different Geographers; Hydrological cycle.

Module: 2

Ecology and Ecosystem; Energy flow in Ecosystem; Ecological factors of the land and their effects on plants animals; Dispersal of plants and animals. Biogeochemical cycles.

Module: 3

Concepts of Biomes, Ecotone and community, Forest Biomes, Grassland Biomes, Desert Biomes, National Parks and Sanctuaries in India and Jharkhand.

Module: 4

Climate as determinant of Bio-Resources; Bio-diversity-degradation and sustainable conservation; Factors of soil formation, Factors of soil erosion and its conservation. Present status of soil in India, Development and management of barren lands in India.

Quality

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE

46



- 1. Singh Savindra (2016): Jaio Bhoogol, Pravalika Publications, Allahabad.
- 2. Pachauli Sarojni & Dubey Rajeshwari (2005) : Jaio Bhoogol, Madhya Pradesh Academy, Bhopal.
- 3. Thomas Samuel & Siddnartha K. (2007): Biosphere : A Geography of Life, Kisalaya Publications Pvt. Ltd. , New Delhi.
- 4. Siddhartha K. (2013): Ecology & Enivornment, Kisalay Publications Pvt. Ltd., New Delhi.
- 5. Rao B.P. & Shrivastava V.K. (2006): Paryavaran our Paristhitiki, Vasundhara Prakashan, Gorakhpur.
- 6. Negi P.S. (2010-11) : Paristhitiki Evam Paryavaran Bhoogal, Rustogi Publications, Meerut.
- 7. Karmondy Edward J. (2009): Concept of Ecology, PHI learning Private Ltd.., New Delhi.
- 8. Prasad Gayatri & Nautiyal Rajesh (2012) : Paryavaran Bhoogal, Sharda Pustak Bhawan, Allahabad.



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CORE COURSE - 14 (CC-14)



CORE -14 (Theory)

Southern Continents

4 Credits (Teaching 4 hours per week minimum 48 teaching hours) F.M.: 70

Module: 1

South America: Physiography, Agriculture, Demographic Set-up and regional study of Brazil.

Module - 2

Austalia and New Zealand: General account of the Physiography, Dairy farming and Demographic set-up; detailed regional study of New Zealand.

Module - 3

Africa: Physiography, Agriculture, Grasslands (Savanna) and desert environment, Regional account of Egypt.

Module - 4

Geographical Account of Argentina, South Africa, Social and cultural aspects of Bushman, hotentot, Maori and Bora.

Quahlo

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
MANOHARPIJR W SINGHRHUM

- 1. Bharadawaj O.P. (1964): Three Southern continents, premier Publishing Co. New Delhi.
- 2. Singh Jagdish Rao Bachha Prasad & Singh Rambali (1998): Teen Dakshini Mahadweap, Vasundhara Prakashan Gorakhpur.
- 3. Jain S.M. & Mamoria Chaturbhuj (1999) : Bhowgolik Chintan Evam Teen Dakshini Mahadweep, Sahitya Bhawan, Publishers , Agra
- 4. Manku Singh Drashan (2009) : A Regional Gegography of the World, Kalyani Publishers, New Delhi.
- 5. Mamoria Chaturbhuj & Maheshwari Deepak (2012) : Vishva Ka Pradeshik Bhoogal, Sahitya Bhawan Publication, Agra.
- 6. Saxena Harimohan & Saxena Rahul & Saxena Puja (2006-2007) Visva Ka Pradeshik Bhoogol, Rustogi Publications, Meerut.
- 7. Gautam Alka (2007): World Geography, Sharda Pustak Bhawan, Allahabad.
- 8. Hussain Majix (2008): World Geography, Rawat Publications, Jaipur.

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CORE COURSE - (P) -6 [CC(P) -6]

PRACTICAL

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)			
1.	i) Scatter diagramii) Correlation and regression analysis.iii) Application of G.I.S., Remote Sensing and Air-Photography.	[10]	
2.	Instrumental Survey : i) Dumpy Level Survey ii) Indian Clinometer	[15]	
3.	Project on Environmental Awareness	[15]	
4.	Note Book + Regularity	[10]	
5.	Viva – Voce	[10]	



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- 1. Sharma J.P. (2004): Prayogik Bhoogol, Rustogi Publications, Meerut.
- 2. Singh R.L. & Singh P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatva, Kalyani Publishers, New Delhi.
- 3. Singh Gopal: Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
- 4. Kanetkar T.P. & Kulkarni S.V. (1993) : Surveying and Levelling, Pune Vidyarthi Griha Prakashan, Pune.
- 5. Sarkar Ashis (2015): Practical Geography a systematic approach, orient Blackswan Pvt. Ltd., New Delhi.
- 6. Singh R.L. & Singh P.B.(2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 7. Chauhan P.R. & Surat Ram (1998): Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.
- 8. Mamoria Chaturbhuj and Jain Shesmal; Man Chitrankan Evam Prayogik Bhoogol, Sahitya Bhawan, Agra.

Quality

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DISCIPLINE SPECIFIC ELECTIVE -3 (DSE-3)

THEORY

Scientific Research in Geography

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M.: 70

Module - 1:

Research in Geography: Meaning of Research, History of Geographical Research, Objectives & Purpose of Research. Trends of Research.

Module - 2:

Approaches & Tools : Approaches of Scientific Research, Type of Research & Tools of Research.

Module - 3:

Research Methods & Methodology: Hypothesis, Significance of Research, Review of Literature, Research Design, Data Collection & Analysis.

Module - 4:

Scientific Report Writing: Techniques of Scientific Report Writing, Criteria of good Research, Problems Researchers are facing in India.

Quahle

ACTING PRINCIPAL
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MANOHARPUR W SINGHRHUM



- 1. Sulaiman Md. and Kumar Dinesh (2010-11): Manovigyan, Samajshastra Tatha Shiksha Me Shodh Vidhiyan General Book Agency, Patna.
- 2. Gupta S.P. (2014) : Anusandhan Sandarshika, Sharda Pustak Bhawan, Allahabad.
- 3. Phariya B.L. (2012) : Shodh Paddhatiyan Sahitya Bhawan Publications, Agra.
- 4. Kothari C.R. (2004): Research Methodology, New Age International (P) Limited Publishers, New Delhi.
- 5. Shrivastava D.N.: Anusandhan Vidhiyan, Sahitya Prakashan, Agra.
- 6. Roy Parasnath & Roy C.P. (2013-14): Anushandhan Parichai Lakshmi Narain Agarwal Prakashan, Agra.
- 7. Sarangi Prasant (2010): Research Methodology Taxmann Publications (P) Ltd., New Delhi.

Quahlo

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DISCIPLINE SPECIFIC ELECTIVE -P-2 (DSE- (P)-2)

PRACTICAL

2 Credits (Teaching 2 hours per week minimum 24 teaching hours) F.M.: 30

Extensive Field Work

Group - A

The students will choose a Geographical problem related to environment

Or society and prepare a Research project based on scientific

methodology.

[20]

Group -B

Viva Voce based on the above research Project. [10]

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PRACTICAL

2 Credits (Teaching 4 hours per week minimum 48 teaching hours) F.M.: 100

Extensive Field Work

Group - A

The Students have to prepared a project work based on a Comprehensive field survey of an area with specific problem Allotted by the H.O.D.

[70]

Group -B

Viva Voce based on project work.

[30]

Quahla

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SCHEME FOR CBCS IN

B.A. HONS. (GE) AND B.A. PROGRAM (DSC) GEOGRAPHY

	,		* //
Semester	Courses	Paper	RPVMarks
	GE/DSC-1A	Introduction of Geography	70 (4)
	GE/DSC (P)-2A	Practical	30 (2)
	GE/DSC-1B	Geomorphology	70 (4)
	GE/DSC (P)-2B	Practical	30 (2)
	GE/DSC-1C	India & Jharkhand	70 (4)
	GE/DSC (P)-2C	Practical	30 (2)
	SEC -1	Emerging Trends in Geography	35)(2)
	SEC -1	Internal Assessment / Practical	15 = 50
	GE/DSC-1D	Climatology and Oceanography	70 (4)
	GE/DSC (P)-2D	Practical	30 (2)
	SEC -2	Field work in Geographical Study	35 (2)
	SEC-2	Internal Assessment/Practical	15 = 50
	DSE – 1A	Disaster Management/Rural Development	70 (4)
	DSE (P)-2A	Practical	30 (2)
	GE-1	Introduction to Geography	70
	GE-1 (P)	Practical	30
	SEC – 3	Cartographic Techniques and Maps	35 (2)
	SEC -3	Internal Assessment/Practical	15 =50
	DSE – 1B	Climatic change : Vulnerability & Adaptation	70 (4)
	DSE (P) – 2 B	Practical	30 (2)
	GE-2	Geomorphology	70
	GE-2 (P)	Practical	30
	SEC – 4	Regional Planning and Development	35)(2)
	SEC -4	Internal Assessment/Practical	15 = 50
	DSE- 3B	Tour & Project	100 (6)

Quality

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USTINES

FIRST SEMESTER

GENERIC ELECTIVE / DISCIPLINE SPECIFIC COURSE – 1A (GE/DSC-1A)

GE/DSC-1A (Theory)

Introduction to Geography

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M.: 70

Module - 1:

Nature and scope of Geography: Geography as a science; place of Geography in classification of Sciences, concept of space and concept of landscape (Regional cultural).

Module - 2:

Geography in Ancient (Greek, Rome and India) and Medieval period; Development of Geography in Modern Period (German School, French School) Contribution of Humboldt, Ritter, Ratzel, Blache and Hartshorne to Geography.

Module - 3:

Methods and Techniques in Geography – Quantitative, Behavioural, Radical, Humanistic and Environmental; Remote Sensing, GIS, GPS and computer cartography, Trends in Renaissance period.

Module - 4:

Geographical knowledge and people – Career in Geography, noted Indian Geographers who contributed to development of India, Man-environment Relationship.

Quahle

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MANOHARPIJR W SINGHBHUM

- 1. Maurya S.D. (2007): Bhoogol Parichay, Sharda Pustak Bhawan, Allahabad.
- 2. Adhikari Sudeepta (2001): Fundamentals of Gegraphical thought, Chaitanya Publishing House, Allahabad.
- 3. Jain M.M. (2012) : Bhowgolik Chintan Evam Vidhitantra Sahitya Bhawan Publications, Agra.
- 4. Dixit Shrikant (2005) : Bhoogol Ki Prastavna, Vasundhara Prakashan, Gorakhpur.
- 5. Dixit Ramesh Dutt (2007) : Bhoogolik Chintan Ka Vikas Ek Aitehasik Samiksha, Prents Hall of India Private Ltd., New Delhi.
- 6. Singh D.P. (2013) : Bhowgolik Chintan Ki Samiksha Sharda Pustak Bhawan, Allahabad.
- 7. Hussain Majid : Evolution of Geographical thought, Rawat Publications, Jaipur.
- 8. Shrivasta V.K. (2007) : Bhowgolik Chintan Ke Adhar, Vasundhara Prakashan, Gorakhpur.

Quahlo

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GENERIC ELECTIVE / DISCIPLINE SPECIFIC COURSE (P) - 2A (GE/DSC-(P) -2A)

PRACTICAL

Credits (Teaching 2 hours per week minimum 24 teaching hours) F.M.: 30
 Hythergraph and Climograph and their interpretation. [10]
 Statistical Methods: Mean, Median and Mode. [05]
 Note Book + Regularity [10]
 Viva - Voce [05]

Quahlo

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIJR, W. SINGHBHUM



- 1. Sharma J.P. (2004): Prayogik Bhoogal, Rustogi Publications, Meerut.
- 2. Singh R.L., Singh Rana P.B. (2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Mamoriya Chaturbhuj & Jain Sheshmal: Man Chitrankan Evam Prayogik Bhoogol, Sahitya Bhawan, Agra.
- 4. Sarkar Ashish (2015): Practical Geography, A. Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- 5. Singh R.L. & Singh Rana P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatwa, Kalyani Publishers, New Delhi.
- 6. Chauhan P.R. & Surat Ram (1998); Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.

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SECOND SEMESTER

GENERIC ELECTIVE /DISCIPLINE SPECIFIC COURSE - 1 B (GE/DSC-1B)

GE/DSC-1B (Theory)

GEOMORPHOLOGY

4 Credits (Teaching 4 hours per week and minimum 48 Teaching Hours) F.M.: 70

Module 1: Geo - Tectonics

Theories of origin of the earth; Geological time scale and related topographic and structural evolution; Isostasy: theories of Airy and Pratt; folds and faults – origin, types and their topographic expressions; plate tectonics, earthquake and vulcanicity.

Module - 2: Geomorphology

General degradation processes: processes of rock weathering and their effects on landform; fluvial processes and land forms; Glacial processes and landforms; fluvio-glacial landforms: Aeolian processes and landforms.

Module - 3 Geomorphology and structure

Basic concepts of geomorphology: landforms on granite and basalt; land forms on limestone; development of river network and land forms on uniclinal and folded structures.

Module - 4: Theories of geomorphology

Normal cycle of erosion by W.M. Davis; views of W. Penck on normal cycle of erosion; Cycle of pediplanation by L.C.King; dynamic equilibrium theory by J.T. Hack.

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Books & Recommended

- 1. Singh Savindra (1998) : Geomorphology, Prayag Pustak Bhawan, Allahabad.
- 2. Singh Savindra (2012-13) : Bhoo-Akriti Vigyan, Vasundhara Prakashan Gorakhpur.
- 3. Ahmad Enayat (2004): Geomorphology, Kalyani Publishers, New Delhi.
- 4. Dayal P. (2000): A Text Book of Geomorphology, Shukla Book Depot, Patna.
- 5. Gautam Alka (2009) : Geomorphology, Sharda Pustak Bhawan, Allahabad.
- 6. Prasad Gayatri (2012) : Bhoo Akriti Vigyan, Sharda Pustak Bhawan, Allahabad.
- 7. Sharma Hari Shankar & Kumar Pramila (1997) : Bhoo-Akriti Vigyan, Madhya Pradesh Hindi Granth Academy .
- 8. Hornbury William D. (2002): Principles of Geomorphology, CBS Publishers & Distributors, New Delhi.

Quahle

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GENERIC ELECTIVE / DISCIPLINE SPECIFIC

COURSE (P) - 2B (GE/DSC-(P) - 2B)

PRACTICAL

2 Credits (Teaching 2 hours per week minimum 24 teaching hours) F.M.: 30

1) Simple Cartograms; Bar, Pie and Dot

[05]

- 2) Study of Topographical maps of India of Hilly and Plain Areas [10] In respect of :
 - i) Relief
 - ii) Drainage
 - iii) Settlement
- 3) Note Book + Regularity

[10]

4) Viva - Voce

[05]

Quahle

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIJR, W SINGHRHUM

- 1. Sharma J.P. (2004): Prayogik Bhoogal, Rustogi Publications, Meerut.
- 2. Singh R.L., Singh Rana P.B. (2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Mamoriya Chaturbhuj & Jain Sheshmal: Man Chitrankan Evam Prayogik Bhoogol, Sahitya Bhawan, Agra.
- 4. Sarkar Ashish (2015): Practical Geography, A. Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- 5. Singh R.L. & Singh Rana P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatwa, Kalyani Publishers, New Delhi.
- 6. Chauhan P.R. & Surat Ram (1998); Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.

Quahle

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THIRD SEMESTER GENERIC ELECTIVE / DISCIPLINE SPECIFIC COURSE - 1C (GE/DSC- 1C)

(GE/DSC-1C

India and Jharkhand

Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M. 70

Module - 1:

India; structure and physiography, drainage (peninsular and extra peninsular), Origin of Monsoon and climatic regions. Edaphic and biotic regions of India; Indian forests and their economic importance.

Module - 2:

India: Minerals - distribution of iron ore, bauxite, manganese, atomic minerals, power resource - coal, petroleum, wind energy in India.

Regional geography : Middle Ganga plain, Lower Ganga plain, Chhotanagpur plateau.

Module - 3:

Jharkhand: Structure and relief, climate, drainage pattern, forest resoures and its economic importance.

Module - 4:

Jharkhand: Agriculture: types and distribution;

Population: Distribution & Density; Mineral Resources, Iron & Steel and

Cement Industries, Economy and habitat of Santhal, Oraon & Munda.

Quahle

ACTING PRINCIPAL
T. AUGUSTINE'S COLLEGE

65

- 1. Mamoria Chaturbhuj Evam Mahato Bhoopal Kumar (2010): Bharat Ka Bhoogol, Jharkhand Ka Pradeshik Bhoogol Sahit, Sahitiya Bhawan Publications, Agra.
- 2. Chauhan V.S. & Gautam Alka (2003-2004): Bharat, Bharatvarsh Ka Vistrit Bhoogol, Rustogi Publication Meerut.
- 3. Khullar D.R. (2006): India, A comprehensive Geography, Kalyani Publishers, New Delhi (In Hindi & English both)
- 4. Gautam Alka (2013) : Bharat Ka Brihad Bhoogol , Sharda Pustak Bhawan, Allahabad.
- 5. Singh Sunil Kumar (2014) : Jharkhand Paridrishya, Crown Publications, Ranchi.
- 6. Singh Sunil Kumar (2005): Inside Jharkhand, Crown Publications, Ranchi.
- 7. Tiwari Ram Kumar (2009) : Jharkhand Ka Bhoogol, Rajesh Publications, New Delhi.
- 8. Kumar Shyam (2004) : Jharkhand : Ek Vistrit Adhyayan, Safal Prakashan, New Delhi.

Quahlo

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GENERIC ELECTIVE / DISCIPLINE SPECIFIC ARPORT COURSE - (P) - 2C (GE/DSC-(P) - 2C)

PRACTICAL

2 Credits (Teaching 2 hours per week minimum 24 teaching hours)				
1)	Map Projection:			
	i) ii)	Cylindrical equal – area and equidistance. Zenithal Equal – Area and Equidistance.		
	iii)	Conical projection with one and two standard parallels.		
2)	Method	d of Data Collection	[05]	
3)	Note B	ook + Regularity	[10]	
4)	Viva –	Voce	[05]	



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STINE

W. SINGHBHUM



- 1. Sharma J.P. (2004): Prayogik Bhoogol, Rustogi Publications, Meerut.
- 2. Singh R.L. & Singh P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatva, Kalyani Publishers, New Delhi.
- 3. Singh Gopal: Map Work and Practical Geography Vikas Publishing House Pvt. Ltd., New Delhi.
- 4. Sarkar Ashis (2015): Practical Geography a systematic approach, orient Blackswan Pvt. Ltd., New Delhi.
- 5. Singh R.L. & Singh P.B.(2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.

Quahle

THIRD SEMESTER SEC-1



EMERGING TRENDS IN GEOGRAPHY

F.M.: 35

Module -1:

Progress in physical Geography: Progress in Geomorphology, recent advances in meteorology and Climatology.

Module - 2:

Progress in Human Geography: Recent advances in Population Geography, Rural Settlements and development, Progress in transport Geography.

Module - 3:

Health Pathology and well being: Definition, Linkages with environment, Diseases and their regional pattern, Health hazards and Biotic treatments.

Internal Assessment/ Practical

- Project work/Report on a relevant topic from the prescribed syllabus allotted by the HOD. [10]
- 2. Viva Voce based on project work. [05]

Quahlo

ACTING PRINCIPAL
T. AUGUSTINE'S COLLEGE

- 1. Deo Sunil (2011) : Bhoo-Akriti Vigyan, Vishva Bharti Publications, New Delhi.
- 2. Maurya S.D. (2010): Manav Bhoogol, Sharda Pustak Bhawan, Allahabad.
- 3. Maurya S.D. (2013) : Jansankhya Bhoogol, Sharda Pustak Bhawan, Allahabad.
- 4. Dixit Ramesh Dutt (2007): Bhowgolik Chintan Ka Vikas, Prentis Hall of India Pvt. Ltd., New Delhi.
- 5. Smch Michael, Elisabeth D.R. and Margaret Carrel (2017): The Guilford Press, New Yark London.
- 6. Ojha N.N. & Singh Sanjay Kumar : Vaikalpik Bhoogal, Cronikal Publications (Pra) Ltd.

Quahlo

FOURTH SEMESTER GENERIC ELECTIVE / DISCIPLINE SPECIFIC HARPEN COURSE - 1D (GE/DSC- 1D)

(GE/DSC-1D (Theory)

Climatology and Oceanography

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M. 70

Module - 1:

Atmosphere: Structure & composition, Insolation, Heat Balance, inversion of temperature, Factors affecting the horizontal distribution of temperature atmospheric pressure – Vertical and horizontal distribution.

Module - 2:

Wind: General Circulation, Planetary winds, Seasonal winds. Air masses, Fronts, jet stream, Koppen's climatic classification, Factors of climate change.

<u>Module - 3 :</u>

Land and sea: hypsographic curve, Zones of ocean bottom accounting to depth, continental slope, deep sea plain & ocean deeps. Bottom relief of Atlantic & Indian oceans, horizontal & vertical distribution of temperature in ocean oceanic routes.

Module - 4:

Composition of sea water: Distribution of salinity in open ocean, Enclosed & partially enclosed sea. Oceanic circulation, factors controlling oceanic circulation in Atlantic & Indian oceans.

Waves & tides: Types of waves & tides, Ocean deposits; terrigenous & pelagic deposits, distribution; coral reefs.

Quahle

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE



- 1. Singh Savindra (2015): Jalvayu Vigyan, Pravalika Publication, Allahabad.
- 2. Singh Savindra (2012): Climatology, Prayag Pustak Bhawan, Allahabad.
- 3. Critchfield Howard J.(1995): General Climatology Prentice Hall of India, New Delhi.
- 4. Lal D.S. (2002): Jalvayu Vigyan, Sharda Pustak Bhawan, Allahabad (Book in Hindi English both)
- 5. Lal D.S. (2010): Oceanography, Sharda Pustak Bhawan, Allahabad. (Book in Hindi & English both)
- 6. Singh Savindra (2011) : Oceanography, Prayag Pustak Bhawan, Allahabad. (Book in Hindi & English both)
- 7. Siddhartha K. (2009): Oceanography, A Brief Introduction, Kisalaya Publications Pvt. Ltd., New Delhi.
- 8. Sharma R.C. & Vatal M. (2009); Chaitanya Publishing House, Allahabad.

Quality

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE
MANOHAPPIIR W. SINCHBHI M.

GENERIC ELECTIVE /DISCIPLINE SPECIFIC HARPIN TO COURSE - (P) - 2D/ (GE/DSC-(P) - 2D)

STINE

PRACTICAL

2 Credits (Teaching 2 hours per week minimum 24 teaching hours) F.M. 30					
1)	Types	of Cartographic symbols and their uses:	[10]		
	i)	Points (proportional, circles and spheres diagram).			
	ii)	Choropleth & Isopleth Representing population,			
		Agriculture, industry and transport data representing			
		of population (distribution, density, growth); land use and	d		
		cropping pattern.			
2)	Statis	tical Method:	[05]		
	i) ii)	Quartiles, deciles, Percentiles Measures of dispersion or variation : Mean deviation,			
		Standard Deviation.			
3)	Note l	Book + Regularity	[10]		
4)	Viva -	- Voce	[05]		

Quahle



- 1. Sharma J.P. (2004): Prayogik Bhoogol, Rustogi Publications, Meerut.
- 2. Singh R.L. & Singh P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatva, Kalyani Publishers, New Delhi.
- 3. Singh Gopal: Map Work and Practical Geography Vikas Publishing House Pvt. Ltd., New Delhi.
- 4. Kanetkar T.P. & Kulkarni S.V. (1993): Surveying and Levelling, Pune Vidyarthi Griha Prakashan, Pune.
- 5. Sarkar Ashis (2015): Practical Geography a systematic approach, orient Blackswan Pvt. Ltd., New Delhi.
- 6. Singh R.L. & Singh P.B.(2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.

Quahlo

FOURTH SEMESTER SEC -2



F.M.: 15

FIELD WORK IN GEOGRAPHICAL STUDY

F.M.: 35

Module: 1

Field work in Geographical study Historical development of field work in Geography, Data and Ethics of field work, Defining the field work and identifying the case study – Rural – Urban, Physical Human and Enviornmental.

Module: 2

Field Technique: Merits, Demerits and selection of the appropriate technique Observation, Questionnaire, interview, space surveying or other techniques.

Module: 3

Designing the field report : Aims, objectives, methodology analysis interpretation and writing the report

Internal Assessment / Practical

Field Survey

- 1. The students have to prepared a project work based on a comprehensive field survey of an area with specific problems allotted by the HOD.
- 2. Viva Voce based on project work.

Quahlo

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- 1. Sinha M.M.P. & Bala Seema (2012): Uchh Cartography, Sharda Pustak Bhawan, Allahabad.
- 2. Sharma J.P. (2004): Prayogik Bhoogal, Rustogi Publications, Meerut.
- 3. Saha Pijushkanti & Basu Partha (2011) : Advanced Practical Geography, Books and Allied (P) Ltd., Kolkata.
- 4. Ray Parasnath & Ray C.P. (2012-13): Ansandhan Parichay, Laxmi Narayan Agarwal, Agra.
- 5. Bajpayee S.R. (2002): Samajik Ansandharn Tatha Servekshan, Kitab Ghar, Kanpur.
- 6. Fariya B.R. (2012) : Shodh Padhhatiyan, Sahitya Bhawan, Publications, Agra.

Quahlo

FIFTH SEMESTER

STUDENT CAN OPT ANYONE OPT THE FOLLOWING:

- 1. Disaster Management
- 2. Rural Development

DISCIPLINE SPECIFIC ELECTIVE - 1A (DSE-1A)

THEORY

Disaster Management

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M.70

Module - 1:

Disasters: definition and concepts; hazards, disasters, risk and vulnerability; classification.

Module - 2:

Disaster in India: (A) flood: Causes, impact, distribution and mapping; landslide: causes impact, distribution and mapping drought: disasters causes, impact, distribution and mapping.

Module - 3:

Disaster in India: (B) earthquake and tsunami: Causes, impact, distribution and mapping; Cyclone: causes, impact, distribution and mapping; Manmade disasters causes, impact, distribution and mapping.

Module - 4

Responses and mitigation to disasters: mitigation and preparedness, NDMA and NIDM; indigenous knowledge and community-based disaster management; do's and don'ts during disasters.

Quality

ACTING PRINCIPAL
T. AUGUSTINE'S COLLEGE
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77



- 1. Singh Savindra & Singh Jeetendra (2013): Disaster Management, Pravalika Publications, Allahabad.
- 2. Garg H.S. (2015): Prabandhan, S.B.P.D Publications, Aapda.
- 3. Mondal Debabrata & Basu Debabrata (2020): Disaster Management Concept and Approaches, CBS Publishers and Distributors.
- 4. Shukl Chandra Prakash (201`9) : Apada Prabandha, Aavishkar Publishers.
- 5. Sharma Varun Dutt Pandey SK & Sharma Vimal Kumar : Environmental Education and Disaster Management, CBS Publishers and distributors.
- 6. Sharma S.C. (2018): Disaster Management Khanna Books Publisher.
- 7. Burnval Mahesh Kumar : Apapda Avam Apda Prabhandhan, Cosmos Publication.
- 8. Singh Savindra (2003) : Paryavaran Bhoogol, Prayag Pustak Bhawan, Allahabad.

Quality

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DISCIPLINE SPECIFIC ELECTIVE - (P) -2A [DSE-(P)-2A]

PRACTICAL

2 Credits (teaching 2 hours per week and minimum 24 teaching hours) F.M.: 30

- 1) Project work / report on relevant topics pertaining to disaster management, Preferable on any major disaster in the world (natural or manmade). [15]
- 2) Project File + Regularity [10]
- 3) Viva Voce [05]

Quahlo

FIFTH SEMESTER

DISCIPLINE SPECIFIC ELECTIVE - 1A (DSE-1A)

THEORY

Rural Development

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M.70

Module - 1:

Defining development: Inter – dependence of Urban and rural sectors of the Economy, need for rural development, Ghandhian concept of rural development.

Module - 2:

Rural economic base : agriculture and allied sectors, seasonality and need for expanding non-farm activates.

Module - 3:

Area based approach to rural development : drought prone area progammes, PMGSY.

Module - 4

Target group approach to rural development: SJSY (Integrated rural development programme). Provision of services physical and socio-economic access to elementary education and primary health care and micro credit.

Quahle



- 1. Singh Katar (2011): Gramin Vikas, Rawat Publications.
- 2. Singh Dharmendra (2017): Panchayati Raj Avam Gramin Vikas, Rawat Publications.
- 3. Singh Katar & Shishodia Anil (2011) : Gramin Vikas : Siddhant, Neetiyan Evam Prabandh Rawat Publications.
- 4. Swami HR & Gupta B.P.: Gramin Vikas & Sahkarita, RBD Publication, Jaipur.
- 5. Patel Rajesh: Gramin Vikas Ki Rooprekha Rawat Prakashan.
- 6. Babel Basanti Lal (2020) : Panchayati Raj Evam Gramin Vikas Yojnayan Rajasthan Hindi Granth Academy Publisher.
- 7, Chand Mahesh & Puri Vinay Kumar (1990): Regional planning in India, Allied Publishers Limited, New Delhi.
- 8. Chand R.C. (2013): Pradeshik Niyojan Tatha Vikas, Kalyan Publishers, New Delhi.

Quahle

ACTING PRINCIPAL
ST. AUGUSTINE'S COLLEGE

DISCIPLINE SPECIFIC ELECTIVE - (P) -2A [DSE-(P)-2A]

PRACTICAL

2 Credits (teaching 2 hours per week and minimum 24 teaching hours) F.M.: 30

- 1. Project work/reort on relevant topics pertaining to rural development In India, preferable, on any flagship programme of the government of India or the state government (Jharkhand). [15]
- 2. Project File + Regularity [10]
- 3. Viva Voce [05]

Quality

FIFTH SEMESTER

GENERIC ELECTIVE COURSE – GE-1



GE-I (Theory)

Introduction to Geography

4 Credits (Teaching 4 hours per week minimum 48 teaching hours)

F.M.: 70

Module - 1:

Nature and scope of Geography: Geography as a science; place of Geography in classification of Sciences, concept of space and concept of landscape (Regional cultural).

Module - 2:

Geography in Ancient (Greek, Rome and India) and Medieval period; Development of Geography in Modern Period (German School, French School) Contribution of Humboldt, Ritter, Ratzel, Blache and Hartshorne to Geography.

Module - 3:

Methods and Techniques in Geography – Quantitative, Behavioural, Radical, Humanistic and Environmental; Remote Sensing, GIS, GPS and computer cartography, Trends in Renaissance period.

Module - 4:

Geographical knowledge and people – Career in Geography, noted Indian Geographers who contributed to development of India, Man-environment Relationship.

Quahle

- 1. Maurya S.D. (2007): Bhoogol Parichay, Sharda Pustak Bhawan, Allahabad.
- 2. Adhikari Sudeepta (2001): Fundamentals of Gegraphical thought, Chaitanya Publishing House, Allahabad.
- 3. Jain M.M. (2012) : Bhowgolik Chintan Evam Vidhitantra Sahitya Bhawan Publications, Agra.
- 4. Dixit Shrikant (2005) : Bhoogol Ki Prastavna, Vasundhara Prakashan, Gorakhpur.
- 5. Dixit Ramesh Dutt (2007) : Bhoogolik Chintan Ka Vikas Ek Aitehasik Samiksha, Prents Hall of India Private Ltd., New Delhi.
- 6. Singh D.P. (2013) : Bhowgolik Chintan Ki Samiksha Sharda Pustak Bhawan, Allahabad.
- 7. Hussain Majid : Evolution of Geographical thought, Rawat Publications, Jaipur.
- 8. Shrivasta V.K. (2007) : Bhowgolik Chintan Ke Adhar, Vasundhara Prakashan, Gorakhpur.

Quality



[05]

FIFTH SEMESTER

GENERIC ELECTIVE COURSE GE-1 (P)

PRACTICAL

4)

2 Credits (Teaching 2 hours per week minimum 24 teaching hours) F.M.: 30

1) Hythergraph and Climograph and their interpretation. [10]

2) Statistical Methods: Mean, Median and Mode. [05]

3) Note Book + Regularity [10]

Quality

Viva - Voce

- 1. Sharma J.P. (2004): Prayogik Bhoogal, Rustogi Publications, Meerut.
- 2. Singh R.L., Singh Rana P.B. (2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Mamoriya Chaturbhuj & Jain Sheshmal: Man Chitrankan Evam Prayogik Bhoogol, Sahitya Bhawan, Agra.
- 4. Sarkar Ashish (2015): Practical Geography, A. Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- 5. Singh R.L. & Singh Rana P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatwa, Kalyani Publishers, New Delhi.
- 6. Chauhan P.R. & Surat Ram (1998); Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.

Quahle

FIFTH SEMESTER



SEC-3

CARTOGRAPHIC TECHNIQUES AND MAPS

F.M.: 35

Module 1:

Meaning and significance of Cartography, Historical development of Cartography, Techniques of Cartography.

Module 2:

Cartograms : Gegraphical scales, enlargement and reduction of maps, contours, conventional signs.

Module 3:

Maps and scales: Basics of map reading and their importance, latitude, longitude dates and time, time zones and international date line.

Internal Assessment / Practical

F.M.:15

- Project work / Report on a relevant topics from the prescribed
 Syllabus allotted by the HOD. [10]
- 2. Viva Voce based on project work. [05]

Quahlo

- 1. Sharma J.P. (2004) Prayogik Bhoogol, Rustogi Publications, Meerut.
- 2. Sinha M.M.P. & Bala Seema (2012): Uchh Cartography, Sharda Pustak Bhawan, Allahabad.
- 3. Sarkar Ashis (2013) : :Quantitative Geography Techniques and Presentations, Orient Blackswan (P) Ltd., New Delhi.
- 4. Singh R.L. & Singh P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatva, Kalyani Publishers, New Delhi.
- 5. Mamoria Chaturbhuj & Jain Sheshmal : Man-Chitrankan Evam Prayoyik Bhoogol, Sahitya Bhawan, Agra.
- 6. Singh R.L., Singh Rana P.B. (2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.

Quahle

SIX SEMESTER

DISCIPLINE SPECIFIC ELECTIVE - 1B (DSE-1B)

Theory

Climatic Change: Vulnerability & Adaptation

4 Credits (Teaching 4 hours per week and minimum 48 Teaching hours) F.M.: 70

Module: 1

Science of climate change : Undersanding climate change ; Green house effect and Global warming, global climatic assessment – IPCC.

Module: 2

Climate change and vulnerability : Physical vulnerability, economic vulnerability Social vulnerability.

Module: 3

Impact of climate change : Agriculture and water; Flora and Fauna; Human Health.

Module: 4

Adaptation and mitigation: Global initiatives with particular reference to south Asia; National Action plan on climate change; Local institution (Urban local bodies, Panchayats).

Quality



- 1. Singh Savindra (2015): Jalvayu Vigyan, Pravalika Publication, Allahabad.
- 2. Singh Savindra (2012): Climatology, Prayag Pustak Bhawan, Allahabad.
- 3. Critchfield Howard J.(1995): General Climatology Prentice Hall of India, New Delhi.
- 4. Lal D.S. (2002) : Jalvayu Vigyan, Sharda Pustak Bhawan, Allahabad (Book in Hindi English both)
- 5. Lal D.S. (2010): Oceanography, Sharda Pustak Bhawan, Allahabad. (Book in Hindi & English both)
- 6. Singh Savindra (2011) : Oceanography, Prayag Pustak Bhawan, Allahabad. (Book in Hindi & English both)
- 7. Siddhartha K. (2009): Oceanography, A Brief Introduction, Kisalaya Publications Pvt. Ltd., New Delhi.
- 8. Sharma R.C. & Vatal M. (2009); Chaitanya Publishing House, Allahabad.

Quahlo

DISCIPLINE SPECIFIC ELECTIVE (P) - 2B [DSE (P) 2B)

PRACTICAL

2 Credits (Teaching 2 hours per week and minimum 24 teaching hours) F.M.:30

- 1) Project work/report on relevant topics pertaining to climate change and efforts to tackle it, preferably on any major climate change issue. [15]
- 2) Note Book + Regularity [10]
- 3) Viva Voce [05]

Quality

DISCIPLINE SPECIFIC ELECTIVE (P) - 3B [DSE 3B]

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TOUR & PROJECT

F.M.: 100

Group - A

Field Survey within the state for the study of natural resources & their utilization. [40]

Group - B

Socio-Economic Survey in and around your city/town (Topic allotted by the Department of Geography) [30]

Viva-Voce based on field survey & Socio-Economic Survey.

[30]



SIXTH SEMESTER



GENERIC ELECTIVE COURSE - GE-2

GE -2 (Theory)

GEOMORPHOLOGY

4 Credits (Teaching 4 hours per week and minimum 48 Teaching Hours) F.M.: 70

Module 1: Geo - Tectonics

Theories of origin of the earth; Geological time scale and related topographic and structural evolution; Isostasy: theories of Airy and Pratt; folds and faults – origin, types and their topographic expressions; plate tectonics, earthquake and vulcanicity.

Module - 2: Geomorphology

General degradation processes: processes of rock weathering and their effects on landform; fluvial processes and land forms; Glacial processes and landforms; fluvio-glacial landforms: Aeolian processes and landforms.

Module - 3 Geomorphology and structure

Basic concepts of geomorphology: landforms on granite and basalt; land forms on limestone; development of river network and land forms on uniclinal and folded structures.

Module – 4: Theories of geomorphology

Normal cycle of erosion by W.M. Davis; views of W. Penck on normal cycle of erosion; Cycle of pediplanation by L.C.King; dynamic equilibrium theory by J.T. Hack.

Quality

Books & Recommended

- 1. Singh Savindra (1998) : Geomorphology, Prayag Pustak Bhawan Allahabad.
- 2. Singh Savindra (2012-13) : Bhoo-Akriti Vigyan, Vasundhara Prakashan Gorakhpur.
- 3. Ahmad Enayat (2004): Geomorphology, Kalyani Publishers, New Delhi.
- 4. Dayal P. (2000) : A Text Book of Geomorphology, Shukla Book Depot, Patna.
- 5. Gautam Alka (2009) : Geomorphology, Sharda Pustak Bhawan, Allahabad.
- 6. Prasad Gayatri (2012) : Bhoo Akriti Vigyan, Sharda Pustak Bhawan, Allahabad.
- 7. Sharma Hari Shankar & Kumar Pramila (1997) : Bhoo-Akriti Vigyan, Madhya Pradesh Hindi Granth Academy .
- 8. Hornbury William D. (2002): Principles of Geomorphology, CBS Publishers & Distributors, New Delhi.

Quahlo

SIXTH SEMESTER



GENERIC ELECTIVE / COURSE - GE-2 (P)

PRACTICAL

2 Credits (Teaching 2 hours per week minimum 24 teaching hours) F.M.: 30

- 1) Simple Cartograms; Bar, Pie and Dot [05]
- 2) Study of Topographical maps of India of Hilly and Plain Areas [10] In respect of :
 - i) Relief
 - ii) Drainage
 - iii) Settlement
- 3) Note Book + Regularity [10]
- 4) Viva Voce [05]

Quahlo



- 1. Sharma J.P. (2004): Prayogik Bhoogal, Rustogi Publications, Meerut.
- 2. Singh R.L., Singh Rana P.B. (2002): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Mamoriya Chaturbhuj & Jain Sheshmal: Man Chitrankan Evam Prayogik Bhoogol, Sahitya Bhawan, Agra.
- 4. Sarkar Ashish (2015): Practical Geography, A. Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- 5. Singh R.L. & Singh Rana P.B. (2013): Prayogatmak Bhoogol Ke Mool Tatwa, Kalyani Publishers, New Delhi.
- 6. Chauhan P.R. & Surat Ram (1998); Prayogatmak Bhoogol, Vasundhara Prakashan, Gorakhpur.

Quality

SIXTH SEMESTER





REGIONAL PLANNING AND DEVELOPMENT

F.M.: 35

Module: 1

Definition, Evolution and Types: Definition of region, Evolution and types of regional planning.

Module: 2

Choice of a region for planning: Characteristics of an ideal planning region, delineation of planning region, regionalization of India for planning.

Module: 3

Changing concept of development and planning: Concept of under development and sustainable development, Rural and Urban Planning.

Internal Assessment / Practical

F.M.: 15

- 1. Project work/Report on a relevant topics from the prescribed syllabus Allotted by the HOD. [10]
- 2. Viva Voce [05]

Quality

- 1. Chand Mahesh & Puri V.K. (2012): Regional Planning in India, Allied Publishers Pvt. Ltd., New Delhi.
- 2. Chandna R.C. (2010) Regional Planning and development, Kalyani Publishers, New Delhi.
- 3. Sharma Nandeshwar (2012) : Peradeshik Niyojan Bhoogol, Drishtikon Prakasan Pvt. Ltd., New Delhi.
- 4. Singh Mahendra Bahadur & Dubey Kamla Kant (2012) : Pradeshk Vikas Niyojan, Tara Book Agency, Varanasi.
- 5. Chandna R.C. (2013): Pradeshik Niyojan Tatha Vikas, Kalyani Publishers, New Delhi.
- 6. Bhat L.S. (1973): Regional Planning in India, Micro Level Planning.

Quality



CHOICE BASED CREDIT SYSTEM (CBCS)

	CHARPUR
कोल्हान विश्वविद्यालय, चाईबास	
रुचि आधारित शाख पद्धति /स्नातक हिन्दी	
सेमेस्टर 01	4141-O1
	6 क्रेडिट/100 अंक
	6 क्रेडिट / 100 अंक 6 क्रेडिट / 100 अंक
कार 02 आदिकालान एप नावतकालान कापताय	७ क्राइट/१०० अक
AECC 1 MIL/संप्रेषण	2 क्रेडिट / 50 अंक
	6 क्रेडिट / 100 अंक
सेमेस्टर 02	
कोर 03 हिन्दी साहित्य का इतिहास : आधुनिक काल	3 क्रेडिट / 100 अंक
कोर 04 हिन्दी नवोन्मेष काव्य	3 क्रेडिट / 100 अंक
A F.C.C. 2	→
,	क्रेडिट / 50 अंक
G E Z	६ क्रेडिट / 100 अंक
सेमेस्टर 03	
कोर 05 छायावाद एवं प्रगतिवाद : पृष्ठभिम, प्रवृतियाँ : काव्य अध्ययन	6 क्रेडिट / 100 अंक
कोर 06 प्रयोगवाद एवं नयी कविता : पृष्टभिम, प्रवृतियाँ : काव्य अध्ययन	6 क्रेडिट / 100 अंक
कोर ०७ भारतीय काव्यशास्त्र	6 क्रेडिट / 100 अंक
S E C 1 Current Affairs 1. सामान्य ज्ञान	2 क्रेडिट / 50 अंक
G E 3 जेनरिक इलेक्टिव	6 क्रेडिट / 100 अंक
सेमेस्टर 04	
कोर ०८ हिन्दी कथा साहित्य	6 क्रेडिट / 100 अंक
कोर 09 हिन्दी नाटक एवं एकांकी	6 क्रेडिट / 100 अंक
कोर 10 हिन्दी आलोचना एवं निबंध	6 क्रेडिट / 100 अंक
. S E C 2 1. दक्षता विकास	2 क्रेडिट / 50 अंक
. G E 4 जेनरिक इलेक्टिव	6 क्रेडिट / 100 अंक
सेमेस्टर 05	
कोर 11 हिन्दी भाषा	6 क्रेडिट / 100 अंक
कोर 12 जन संचार	6 क्रेडिट/100 अंक
DSE1/Elective DSE 1/ विशेष पत्र (क) हिन्दी गद्य विधायें (ख) प्रेमचन्द	6 क्रेडिट/100 अंक
DSE2/Elective / DSE 2/ विशेष पत्र (क) तुलसीदास (ख) राष्ट्रीय काव्यधाः	रा 6 क्रेडिट / 100 अंक
सेमेस्टर 06	
कोर13 प्रयोजनमूलक हिन्दी	6 क्रेडिट/100 अंक
कोर 14 हिन्दी पत्रकारिता	6 क्रेडिट/100 अंक
DSE3/Elective / DSE3/ विशेष प्रत्र / शोध प्रवृधि	6 क्रेडिट / 100 अंक
DSE4 /Elective/ DSE4/ विशेष पत्र / लघु शोध लेखन	6 क्रेडिट/100 अंक

W. SINGHBHUM THE SHARKHAND



स्नातक हिन्दी प्रतिष्ठा प्रथम वर्ष/सेमिस्टर 1/कोर 1 हिन्दी साहित्य का इतिहास

आदिकाल, भिक्तकाल एवं रीतिकाल

कोर 1

इकाई 1. हिन्दी साहित्येतिहास लेखन परंपरा

इकाई 2. काल विभाजन, सीमांकन, नामकरण

इकाई 3. हिन्दी साहित्य का आदिकाल

(पृष्ठभूमि एवं प्रवृत्तियाँ, सिद्ध, नाथ और जैन साहित्य)

इकाई 4. मध्यकाल : भक्तिकाल एवं रीतिकाल

(पृष्ठभूमि, प्रवृत्तियाँ एवं काव्यधारायें)

अंक विभाजन

	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनिव	ग्रार्य	2 × 5 = 10
3. चार व्याख्यात्मक में से दो प्रश्नोत्तर अनिवार्य		2 × 5 = 10
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	या)	2 × 15 = 30
नोट - Mid Term Test -		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Poster/Project/Seminar/0	Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05

अनुशंसित पुस्तकें

- 1. साहित्य का इतिहास दर्शन : आ० नलिनविलोचन शर्मा, बिहार राष्ट्रभाषा परिषद, पटना
- 2. हिन्दी साहित्य का इतिहास : आचार्य रामचन्द्र शुक्ल, काशी नागरी प्रचारिणी, सभा
- 3. हिन्दी साहित्य का इतिहास : संपादक डॉ० नगेन्द्र, नेशनल पब्लिकेशन हाउस, दिल्ली
- 4. वस्तुनिष्ठ हिन्दी साहित्य : डा जंगबहादुर पाण्डेय / डा० अर्चना आर्य्, लक्ष्मी प्रकाशन, दिल्ली
- 5. हिन्दी साहित्य का वैज्ञानिक इतिहास : डा० गणपतिचन्द्र गुप्त, लोकभारती प्रकाशन, इलाहावाद



स्नातक हिन्दी प्रतिष्ठा प्रथम वर्ष/सेमिस्टर 1/कोर 2 आदिकालीन, भक्तिकालीन एवं रीतिकालीन कवितारों

कोर 2

इकाई 1. अमीर खुसरो, विद्यापति

इकाई 2. कबीरदास, मलिक मुहम्मद जायसी

इकाई ३. तुलसीदास, सूरदास

इकाई 4. बिहारीलाल, घनानन्द

अंक विभाजन

	समय 3 घंटे	पूर्णांक 70			
1. वैकल्पिक प्रश्न		10 × 2 = 20			
2. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनिव	ार्य	2 × 5 = 10			
3. चार व्याख्यात्मक में से दो प्रश्नोत्तर अनिवार्य		2 × 5 = 10			
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	π)	$2 \times 15 = 30$			
नोट - Mid Term Test -					
1. आलोचनात्मक, वैकल्पिक,		15			
2. Assignment/Poster/Project/Seminar/0	Quiz	10			
3. उपस्थिति, कार्य—व्यवहार, आचरण		05			
अनुशंसित पुस्तकें					
1. स्वर्णमंजूषा					
2. त्रिवेणी, आचार्य रामचन्द्र शुक्ल, काशीनागरी प्रचारिणी सभा					
3. कबीर : आचार्य हजारी प्रसाद द्विवेदी, राजकमल !	प्रकाशन, दिल्ली				
4. जायसी : डा० विजयदेव नारायण साही, हिन्दुस्तान	ी अकादमी, इलाहावाद				
5. जायसी : एक नई दृष्टि डा० रघवंश, लोकभारती,	इलाहावाद				



AECC 1 MIL/ हिन्दी व्याकरण और संप्रेषण

इकाई 1.

क. हिन्दी व्याकरण एवं रचना – संज्ञा, सर्वनाम, विशेषण, क्रिया ख. उपसर्ग, प्रत्यय, समास, विलोम शब्द, अनेक शब्दों के एक शब्द, पल्लवन, संक्षेपण,

इकाई 2.

क. संप्रेषण की अवधारणा एवं महत्व ख. संप्रेषण की प्रक्रिया, ग, संप्रेषण के माध्यम ख. संप्रेषण के प्रकार — क. मौखिक और लिखित ख. वैयक्तिक और सामाजिक संप्रेषण के बढ़ते चरण : क. सूचना समाज ख. संचार

अंक विभाजन

	समय 1/1.2 घंटे	पूर्णांक 50
1. वैकल्पिक प्रश्न		5 × 2 = 10
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) अनिवाय	र्न	4 × 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (२०० शब्द संख्या)		2 × 15 = 20

अनुशंसित पुस्तकें

1. हिन्दी व्याकरण और रचना : डा० वासदेवनन्दन प्रसाद

2. संप्रेषणपरक व्याकरण : सिद्धान्त और स्वरूप - सुरेश कुमार



स्नातक हिन्दी जेनरल प्रथम वर्ष/सेनिस्टर 1/GE 1एलेक्टिव

जनसंचार

इकाई 1. जनसंचार : अवधारणा, महत्त्व, भारत में जनसंचार का उद्भव और विकास

इकाई 2. जनसंचार के विविध माध्यम : मुद्रित, श्रव्य एवं दृश्य

इकाई 3. जनसंचार और भाषा का अंतःसंबंध

इकाई 4. जनसंचार की भाषा : मुद्रित, श्रव्य एवं दृश्य

3. जनसंचार माध्यमों में हिन्दी : डा० चन्द्र कुमार

क्सासिकल पब्लिसिंग कम्पनी, नई दिल्ली 110015

अंक विभाजन

	अक विभाजन	
	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) अनि	नेवार्य	4 × 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख	या)	2 × 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project/	Quiz	10
3. उपस्थिति, कार्य-व्यवहार, आचरण		05
अनुशंसित पुस्तकें –		
1. बाखबर बेखबर : डा० मिथिलेश : दिशा इंटरेशनल	। पब्लिकेशन हाउस, दिल्ली	
2. जनसंचार और हिन्दी पत्रकारिता : डा० अर्जुन ति	वारी : जय भारती, इलाहावाद	[



स्नातक हिन्दी प्रतिष्ठा प्रथम वर्ष/सेमिस्टर 2/कोर 3 हिन्दी साहित्य का इतिहास आधुनिक काल

कोर 3

इकाई 1. नवजागरण, पुनर्जागरण एवं आधुनिकता

इकाई 2. भारतेन्दु युग एवं द्विवेदी युग : प्रवृत्तियाँ

इकाई 3. छायावाद एवं प्रगतिवाद : प्रवृत्तियाँ

इकाई 4. हिन्दी गद्य का विकास

अंक विभाजन

	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) अन्	नेवार्य	4 × 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	या)	$2 \times 15 = 30$
नोट - Mid Term Test -		
1. आलोचनात्मक, वैकल्पिक,	15	
2. Assignment/Seminar/Poster/Project/	Quiz 10	
3. उपस्थिति, कार्य—व्यवहार, आचरण	05	
अनुशंसित पुस्तकें		
1. साहित्य का इतिहास दर्शन : आ० नलिनविलो	वन शर्मा, बिहार राष्ट्रभाषा	परिषद, पटना
२ हिन्दी साहित्य का दितहास आचार्य रामचन्द	शक्ल काशी नागरी पचारि	रेणी सभा

2. हिन्दी साहित्य का इतिहास : आचार्य रामचन्द्र शुक्ल, काशी नागरी प्रचारिणी, सभा

3. हिन्दी साहित्य का इतिहास : संपादक – डॉ० नगेन्द्र, नेशनल पब्लिकेशन हाउस, दिल्ली

4. वस्तुनिष्ठ हिन्दी साहित्य : डा जंगबहादुर पाण्डेय / डा० अर्चना आर्य्, लक्ष्मी प्रकाशन, दिल्ली

5. हिन्दी साहित्य का वैज्ञानिक इतिहास : डा० गणपतिचन्द्र गुप्त, लोकभारती प्रकाशन, इलाहावाद



स्नातक हिन्दी प्रतिष्ठा प्रथम वर्ष/सेमिस्टर 2/कोर 4 हिन्दी नवोन्मेर काव्य

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क	₹	4

इकाई 1. हिन्दी नवोन्मेष काव्य की विविध प्रवृत्तियाँ व रचनाकार

इकाई 1. भारतेन्दु हरिश्चन्द्र, मैथिलीशण गुप्त

इकाई 2. माखन लाल चतुर्वेदी, सुभद्रा कुमारी चौहान

इकाई 3. बालकृष्ण शर्मा नवीन, मोहनलाल महतो वियोगी

अंक विभाजन

	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनिव	ार्य	2 × 5 = 10
3. चार व्याख्यात्मक में से दो प्रश्नोत्तर अनिवार्य		2 × 5 = 10
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	T)	$2 \times 15 = 30$
नोट - Mid Term Test -		
1. आलोचनात्मक, वैकल्पिक,	15	
2. Assignment/Seminar/Poster/Project/0	Quiz 10	
3. उपस्थिति, कार्य—व्यवहार, आचरण	05	

अनुशंसित पुस्तकें

- 1. हिन्दी काव्यधारा : हिन्दी विभाग, कोल्हान विश्वविद्यालय
- 2. हिन्दी साहित्य का इतिहास : आचार्य रामचन्द्र शुक्ल, काशी नागरी प्रचारिणी, सभा
- 3. हिन्दी साहित्य का इतिहास : संपादक डॉ० नगेन्द्र, नेशनल पब्लिकेशन हाउस, दिल्ली
- 4. वस्तुनिष्ठ हिन्दी साहित्य : डा जंगबहादुर पाण्डेय / डा० अर्चना आर्य्, लक्ष्मी प्रकाशन, दिल्ली
- 5. हिन्दी साहित्य का वैज्ञानिक इतिहास : डा० गणपतिचन्द्र गुप्त, लोकभारती प्रकाशन, इलाहावाद



स्नातक विज्ञान / कला /वाणिज्य / प्रतिष्ठा एवं जेनरल प्रथम वर्ष/सेमिस्टर 2/AECC 2

पर्यावरण विज्ञान : Enviromentl Science

इकाई-1: परिभाषा, स्वरूप, विविध क्षेत्र, महत्व, संरक्षण, पर्यावरण के प्रति जन-जागरुकता, पर्यावरण और हम, भारत में पर्यावरण जागरुकता

इकाई—2 : पर्यावरण प्रदूषण, वायु प्रदूषण, जल प्रदूषण, मृदा प्रदूषण, ध्विन प्रदूषण, परमाणु प्रभाव / पर्यावरण प्रदूषण, प्रकार, नियंत्रण के उपाय

समय 2 घंटे पूर्णांक 50 ओ० एम० आर० से परीक्षा होगी / पास अंक 20

सहायक ग्रंथ

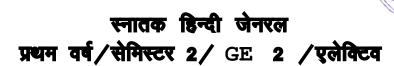
1. आज भी खड़े हैं तालाब : अनुपम प्रकाशन, शिल्पायन, नई दिल्ली

2. पर्यावरण अध्ययन : दयाशंकर त्रिपाठी

3. मानव अधिकार और पर्यावरण संतुलन : डा० हरिमोहन

4. पर्यावरण अध्ययन : इरा भरूचा, ओरिएन्टल ब्लेकरवांग, नई दिल्ली

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प्रयोजनमूलक हिन्दी

इकाई 1. प्रयोजनमूलक हिन्दी	: अवधारणा,	स्वरूप और	इसके विविध क्षेत्र
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इकाई 2. प्रशासनिक प्रयोजनमूलक हिन्दी, पारिभाषिक शब्दावलियाँ

इकाई 3. प्रयोजनमूलक हिन्दी : समस्या एवं समाधान

3. व्यावहारिक हिन्दी : डा० जंगबहादुर पाण्डे

इकाई ४. अभ्यास प्रशासनिक पत्राचार, ज्ञापन, टिप्पण, आवेदन, निविदा, अधिसूचना

अंक विभाजन

	अक विमाजन	
	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) आं	नेवार्य	4 × 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख	या)	2 × 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project	/Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05
अनुशंसित पुस्तकें –		
1. प्रयोजनमूलक हिन्दी : डा० बालेन्दुशेखर तिवारी,	संजय प्रकाशन, वाराणसी	
2. प्रयोजनमूलक हिन्दी : डा० डा० दिनेश प्रसाद सिं	ह	



स्नातक हिन्दी प्रतिष्ठा द्वितीय वर्ष/सेमिस्टर 3/कोर 5

छायावादी एवं प्रगतिवादी काव्य

कोर 5

इकाई 1. जयशंकर प्रसाद, सर्यकान्त त्रिपाठी निराला, महादेवी वर्मा,

सृमित्रानन्दन पंत : व्यक्तित्व एवं कृतित्व

इकाई 2. नागार्जुन, केदारनाथ अग्रवाल : व्यक्तित्व एवं कृतित्व

इकाई 3. बीती विभावरी जाग री, तोड़ती पत्थर, द्रुत झरो, मैं नीर भरी दुख की बदली

इकाई 4. अकाल और उसके बाद, वसंती हवा, सपने

अंक विभाजन

घंटे	पूर्णांक 70
	10 × 2 = 20
	2 × 5 = 10
	2 × 5 = 10
	$2 \times 15 = 30$
15	
10	
05	
	15 10

अनुशंसित पुस्तकें

1. हिन्दी काव्यधारा : हिन्दी विभाग, कोल्हान विश्वविद्यालय

2. छायावाद , नयी कविता और नवगीत : डा० अमल सिंह भिक्षुक, त्रिवेणी प्रकाशन, डिहरी ऑनसोन

3. निराला : डा० इन्द्रनाथ मदान, लोकभारती प्रकाशन, इलाहावाद

4. नागार्जुन : डा० प्रभाकर माचवे, लोकभारती प्रकाशन, इलाहावाद



स्नातक हिन्दी प्रतिष्ठा द्वितीय वर्ष/सेमिस्टर 3/कोर 6

प्रयोगवाद : नयी कविता

कोर 6

इकाई 1. प्रयोगवाद : पृष्ठभूमि एवं प्रवृत्तियाँ

इकाई 2. प्रयोगवाद का विकास : नयी कविता : पृष्ठभूमि एवं प्रवृत्तियाँ

कविताओं का अध्ययन

इकाई 3. अज्ञेय : कलगी बाजरे की, नदी का द्वीप

इकाई 4. सर्वेश्वर दयाल सक्सेना (प्रार्थना), धूमिल (लीक पर वे चलें)

धर्मवीर भारती (कनुप्रिया से)

अंक विभाजन

10

05

	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनिव	ार्य	2 × 5 = 10
3. चार व्याख्यात्मक में से दो प्रश्नोत्तर अनिवार्य		2 × 5 = 10
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	π)	$2 \times 15 = 30$
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,	15	

अनुशंसित पुस्तकें

1. हिन्दी काव्यधारा : हिन्दी विभाग, कोल्हान विश्वविद्यालय

2. Assignment/Seminar/Poster/Project/Quiz

3. उपस्थिति, कार्य-व्यवहार, आचरण

- 2. छायावाद , नयी कविता और नवगीत : डा० अमल सिंह भिक्षुक, त्रिवेणी प्रकाशन, डिहरी ऑनसोन
- 3. हिन्दी साहित्य का इतिहास : संपादक डॉ० नगेन्द्र, नेशनल पब्लिकेशन हाउस, दिल्ली
- 4. वस्तुनिष्ठ हिन्दी साहित्य : डा जंगबहादुर पाण्डेय / डा० अर्चना आर्य्, लक्ष्मी प्रकाशन, दिल्ली
- 5. अज्ञेय की काव्यदृष्टि : डा० परितोष कुमार मणि, अनामिका प्रकाशन, इलाहावाद

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स्नातक हिन्दी प्रतिष्ठा द्वितीय वर्ष/सेमिस्टर 3/कोर 7 भारतीय काव्यशास्त्र

क. कोर 7

इकाई 1. काव्य लक्षण, काव्य के प्रकार, काव्यहेतु, काव्य प्रयोजन, काव्य के गुण

इकाई 2. शब्दशक्ति, रस के स्वरूप, साधारणीकरण

इकाई 3. छंद विवेचन : स्वरूप एवं प्रमुख प्रकार – दोहा, चौपाई, रोला, सोरठा, कुंडलिया, सवैया

इकाई ४. अलंकार विवेचन : स्वरूप एवं प्रमुख प्रकार – उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति, यमक, अनुप्रास

अंक विभाजन

	er in in in er i	
	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनि	ग वार्य	4 × 5 = 20
3. चार छंद और अलंकार में से दो प्रश्नोत्तर अनिवा	र्य	2 × 5 = 10
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संर	<i>ब्</i> या)	2 × 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Projec	t/Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05
पाठय पस्तकें –		

पाठ्य पुस्तकें –

- 1. भारतीय काव्यशास्त्र भगीरथ मिश्र, विश्वविद्यालय प्रकाशन, इलाहावद
- 2. अलंकार मुक्तावली देवेन्द्रनाथ शर्मा, भारती भवन, पटना



स्नातक हिन्दी प्रतिष्ठा द्वितीय वर्ष/सेमिस्टर 3/

सामान्य **ज्ञा**न 50 अंक ओएमआर



स्नातक हिन्दी जेनरल द्वितीय वर्ष/सेमिस्टर GE 3/एलेक्टिव

पाश्वात्य दार्शनिक चिंतन एवं साहित्य

1. अभिव्यंजनावाद : क्रोचे और उनका अभिव्यंजनावाद

2, मार्क्सवाद : अवधारणा, द्वन्द्वात्मक भौतिकवाद, मार्क्सवाद का विकास, हिन्दी के मार्क्सवादी आलोचक

3. कल्पना, बिंब, फेंंटेसी : अवधारणा, महत्व एवं काव्य में प्रयोग

4. मिथक एवं प्रतीक : अवधारणा और महत्व

समय एवं अंक विभाजन

	समय ३ घंटे	पूर्णांक ७०
1. वैकल्पिक प्रश्न (वस्तुनिष्ठ)		10 × 2 = 20
2. चार लघुत्तरीय में से दो प्रश्नोत्तर अनिवार्य		$2 \times 10 = 20$
3. चार दीर्घ उत्तरीय में से दो प्रश्नोत्तर		$2 \times 15 = 30$
		70
नोट – 1. आन्तरिक मूल्यांकन		30
	कुर	न अंक 100

पाठ्य पुस्तकें –

- 1. पाश्चात्य साहित्य सिद्धान्त डा० निर्मला जैन, राधाकृष्ण प्रकाशन
- 2. पाश्चात्य काव्यशास्त्र डा० देवेन्द्रनाथ शर्मा, नेशनल पब्लिशिंग हाउस, नई दिल्ली 2
- 3. पाश्चात्य काव्यशास्त्र डा० नगेन्द्र, राजपाल एण्ड संस, नई दिल्ली
- 4. भारतीय एवं पाश्चात्य काव्यशास्त्र द— डा० कृष्णदेव शर्मा
- 5. वस्तुनिष्ठ काव्यशास्त्र डा० बालेन्दुशेखर तिवारी , क्लासिकल पब्लिकेशन, दिल्ली

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स्नातक हिन्दी प्रतिष्ठा द्वितीय वर्ष/सेमिस्टर 4/कोर 8

हिन्दी कथा साहित्य

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क.	क	₹	8

इकाई 1. हिन्दी उपन्यास व कहानी : अवधारणा एवं विकास

इकाई 2. निर्मला – प्रेमचन्द

इकाई 3. कितने चौराहे – फणीश्वरनाथ रेणु

इकाई ४. हिन्दी काव्यधारा : हिन्दी विभाग, कोल्हान विश्वविद्यालय

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	अंक विभाजन	
	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनिव	गार्य	2 × 5 = 10
3. चार व्याख्यात्मक में से दो प्रश्नोत्तर अनिवार्य		2 × 5 = 10
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	ग्र)	2 × 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project/0	Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05
अनुशंसित पुस्तकें		
1. हिन्दी गद्यधारा : हिन्दी विभाग, कोल्हान विश्वविद्य	प्रालय	
2. प्रेमचन्द के उपन्यासों का शिल्प विधान : कमल वि	क्रेशोर गोइनका, सरस्वती	प्रकाशन, दिल्ली
3. हिन्दी कहानी का विकास : मधुरेश, सुमित प्रकाश	न, इलाहावाद	

4. कहानी : नयी कहानी, डा० नामवर सिंह, राजकमल प्रकाशन, दिल्ली



स्नातक हिन्दी प्रतिष्ठा द्वितीय वर्ष/सेमिस्टर 4/कोर 9

हिन्दी नाटक एवं एकांकी

क कोर 9

इकाई 1. हिन्दी नाटक व एकांकी : अवधारणा एवं विकास

इकाई 2. चन्द्रगुप्त – जयशंकर प्रसाद

इकाई 3. आषाढ़ का एक दिन – मोहन राकेश

इकाई ४. हिन्दी एकांकी धारा : हिन्दी विभाग, कोल्हान विश्वविद्यालय

पाठ्य एकांकियाँ - चारूमित्रा : डा० रामकुमार वर्मा,

अधिकार का रक्षक – उपेन्द्रनाथ अश्क,

सीमा रेखा – विष्णु प्रभाकर,

आवाज का नीलाम – डा० धर्मवीर भारती

अंक विभाजन

	वायम् ।यसावास		
	समय 3 घंटे	पूर्णांक ७०)
1. वैकल्पिक प्रश्न		10 × 2 = 20	
2. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनिवा	र्य	2 × 5 = 10	
3. चार व्याख्यात्मक में से दो प्रश्नोत्तर अनिवार्य		2 × 5 = 10	
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	Γ)	2 × 15 = 30	
नोट — Mid Term Test —			
1. आलोचनात्मक, वैकल्पिक,		15	
2. Assignment/Seminar/Poster/Project/C)uiz	10	
3. उपस्थिति, कार्य–व्यवहार, आचरण		05	

अनुशंसित पुस्तकें

- 1. हिन्दी नाटक उद्भव और विकास, डा० दशरथ ओझा, राजपाल एण्ड संस, दिल्ली
- 2. प्रसाद और उनके नाटक, केशरी कुमार, मोतीलाल बनारसीदास, पटना
- 3. चन्द्रगुप्त : एक मूल्यांकन, राजनाथ शर्मा, विनोद पुस्तक मंदिर, आगरा
- 4. हिन्दी एकोकी : उद्भव और विकास, डा० रामचरण मीहेन्द्र, नेशनल पब्लिकेशन हाउस, दिल्ली



स्नातक हिन्दी प्रतिष्ठा द्वितीय वर्ष/सेमिस्टर 4/कोर 10

हिन्दी आलोचना एवं निबंध

क. कोर 10

इकाई 1. हिन्दी आलोचना एवं निबंध : अवधारणा, उद्भव एवं विकास

इकाई 2. हिन्दी आलोचना के प्रकार : ऐतिहासिक, तुलनात्मक,

सैद्धान्तिक और मनोविश्लेषणवादी

इकाई 3. हिन्दी के प्रमुख आलोचक : आचार्य रामचन्द्र शुक्ल, हजारीप्रसाद द्विवेदी

रामविलास शर्मा, नामवर सिंह

इकाई ४. हिन्दी निबंध धारा : हिन्दी विभाग, कोल्हान विश्वविद्यालय – आरंभ के पाँच निबंध

अंक विभाजन

	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न	10	0 × 2 = 20
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) अनि	वार्य ४	× 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	T) 2	× 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project/0	Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05

पाठ्य पुस्तकें –

1. साहित्यालोचन : डा० श्यामसुन्दर दास

2. भारतीय काव्यशास्त्र की भूमिका : डा० नगेन्द्र

3. वस्तुनिष्ठ काव्यशास्त्र : डा० बालेन्द्रशेखर तिवारी



स्नातक हिन्दी प्रतिष्ठा द्वितीय वर्ष/सेमिस्टर 4/SEC 2

दक्षता विकास : कार्यालयी पत्राचार

इकाई-1:

अभिप्राय, स्वरूप, उद्देश्य तथा क्षेत्र — सरकारी और अर्धसरकारी कार्यालयी पत्रों की पारिभाषिक शब्दावली — पदनाम, औपचारिक पदावलियाँ तथा अनुभाग के नाम, मुख्य कार्यालय, क्षेत्रीय कार्यालय और अन्य प्रशासनिक अधिकारियों के लिए प्रयुक्त होने वाले संबोधन, निर्देश इकाई—2 : कार्यालयी पत्राचार के विविध प्रकार एवं दक्षता का अभ्यास

टिप्पण, प्रारूपण और संक्षेपण, टिप्पण का स्वरूप, विषेशताएँ और भाषा शैली, प्रारूपण के प्रकार, भाषा शैली, प्रारूपण की विधि संक्षेपण के प्रकार, विषेशताएँ और संक्षेपण की विधि कार्यालय से निर्गत पत्र; ज्ञापन, परिपत्र, अनुस्मारक, पष्ठांकन, आदेश, सूचनाएँ, निविदा। रिक्त पदों पर भर्ती हेतु विज्ञापन आवेदन—लेखन

अंक विभाजन

	समय घंटे	पूर्णांक 50
1. वैकल्पिक प्रश्न		5 × 2 = 10
2. चार लघुत्तरीय में से दो प्रश्नोत्तर अनिवार्य		$2 \times 5 = 10$
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर		2 × 10 = 20
4. चार अभ्यासगत में से दो प्रश्नोत्तर अनिवार्य		2 × 5 = 10

सहायक ग्रंथ

1. प्रयोजनमूलक हिन्दी : डा० बालेन्दुशेखर तिवारी, संजय बुक सेंटर, वाराणसी

2. प्रयोजनमूलक हिन्दी : डा० डा० दिनेश प्रसाद सिंह, मोतीलाल बनारसीदास, पटना

3. व्यावहारिक हिन्दी : डा० जंगबहादुर सिंह

4. प्रशासनिक हिन्दी : ओंकारनाथ वर्मा



स्नातक हिन्दी जेनरल द्वितीय वर्ष/सेनिस्टर 4/GE 4 एलेक्टिव

संपादन प्रक्रिया और साज-सज्जा

- 1. संपादन अवधारणा, उद्देश्य, निष्पक्षता
- 2. संपादक योग्यता, दायित्व और महत्व
- 3. समाचार पत्र और पत्रिका के विविध स्तम्भों की योजना और उनका संपादन
- 4. साज—सज्जा और तैयारी मुद्रण के तरिके, दैनिक समाचार पत्र का पृष्ठ निर्माण (डमी)

अंक विभाजन

	समय ३ घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) अनि	वार्य	4 × 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	г)	2 × 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project/0	Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05

अनुशंसित पुस्तकें –

- 1. बाखबर बेखबर : डा० मिथिलेश : दिशा इंटरेशनल पब्लिकेशन हाउस, दिल्ली
- 2. जनसंचार और हिन्दी पत्रकारिता : डा० अर्जन तिवारी : जय भारती, इलाहावाद
- 3. जनसंचार माध्यमों में हिन्दी : डा० चन्द्र कुमार क्सांसिकल पब्लिसिंग कम्पनी, नई दिल्ली 110015



स्नातक हिन्दी प्रतिष्ठा तृतीय वर्ष/सेमिस्टर 5/कोर 11

हिन्दी भाषा

क. कोर 11

इकाई 1. हिन्दी भाषा का उद्भव और विकास

इकाई 2. हिन्दी भाषा के विविध रूप:

इकाई 3. हिन्दी भाषा की शब्द संपदा

2. भाषा विज्ञान : डा० भोलानाथ तिवारी

3. हिन्दी भाषा का विकास : डा० गोनाल राय

इकाई 4. आधुनिक तकनीकी विकास और हिन्दी

अंक विभाजन

	अक विमाजन	
	समय 3 घंटे	पूर्णांक ७०
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) अनिव	गार्य	4 × 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्या))	$2 \times 15 = 30$
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project/Q	uiz	10
3. उपस्थिति, कार्य-व्यवहार, आचरण		05
अनुशंसित पुस्तकें –		
1. भाषा विज्ञान की भूमिका : आचार्य देवेन्द्रनाथ शर	र्ना	

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4. भाषा विज्ञान और हिन्दी : डा० जितेंन्द्र वत्स / डा० देवेन्द्र प्रसाद सिंह



स्नातक हिन्दी प्रतिष्ठा तृतीय वर्ष/सेमिस्टर 5/कोर 12 जनसंचार

क. कोर 12

इकाई 1. जनसंचार : अवधारणा, महत्व, भारत में जनसंचार का उद्भव और विकास

इकाई 2. जनसंचार के विविध माध्यम : मुद्रित, श्रव्य एवं दृश्य

इकाई 3. जनसंचार और भाषा का अंतःसंबंध

इकाई 4. जनसंचार की हिन्दी : मुद्रित, श्रव्य एवं दृश्य

अंक विभाजन

	अंक विभाजन	
	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) अनि	नेवार्य	4 × 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	π)	2 × 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project/	Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05
अनुशंसित पुस्तकें –		
1. बाखबर बेखबर : डा० मिथिलेश : दिशा इंटरेशनल	पब्लिकेशन हाउस, दिल्ली	
2. जनसंचार और हिन्दी पत्रकारिता : डा० अर्जन तिव	गारी : जय भारती, इलाहावाद	
3. जनसंचार माध्यमों में हिन्दी : डा० चन्द्र कुमार		

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क्सासिकल पब्लिसिंग कम्पनी, नई दिल्ली 110015



स्नातक हिन्दी प्रतिष्ठा तृतीय वर्ष/सेमिस्टर 6/कोर 13

प्रयोजनमूलक हिन्दी

क. कोर 13

इकाई 1. प्रयोजनमूलक हिन्दी : अवधारणा, स्वरूप और इसके विविध क्षेत्र

इकाई 2. प्रशासनिक प्रयोजनमूलक हिन्दी, पारिभाषिक शब्दावलियाँ

इकाई 3. प्रयोजनमूलक हिन्दी : समस्या एवं समाधान

3. व्यावहारिक हिन्दी : डा० जंगबहादुर सिंह

इकाई ४. अभ्यास प्रशासनिक पत्राचार, ज्ञापन, टिप्पण, आवेदन, निविदा, अधिसूचना

अंक विभाजन

	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न		10 × 2 = 20
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) आं	नेवार्य	4 × 5 = 20
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख	या)	2 × 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project/	Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05
अनुशंसित पुस्तकें –		
1. प्रयोजनमूलक हिन्दी : डा० बालेन्दुशेखर तिवारी		
2. प्रयोजनमूलक हिन्दी : डा० डा० दिनेश प्रसाद सिं	ह	



स्नातक हिन्दी प्रतिष्ठा तृतीय वर्ष/सेमिस्टर 6/कोर 14 हिन्दी पत्रकारिता

क. कोर 14

इकाई 1. हिन्दी पत्रकारिता : अवधारणा, महत्व एवं प्रकार

इकाई 2. हिन्दी पत्रकारिता का उद्भव, विकास एवं चुनौतियाँ

इकाई 3. समाचार संकलन एवं संपादन

इकाई 4. संपादक एवं पत्रकार की अर्हतायें, सम्पादकीय का महत्व

अंक विभाजन

0147	7 14 11 01 1	
सम	नय ३ घंटे पूर्णांक ७०	ফ 70
1. वैकल्पिक प्रश्न	$10 \times 2 = 20$	0
2. आठ लघुत्तरीय में से चार प्रश्नोत्तर (25 शब्द) अनिवार्य	4 × 5 = 20	<u>'</u> 0
3. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्या)	$2 \times 15 = 30$	0
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,	15	
2. Assignment/Seminar/Poster/Project/Quiz	z 10	
3. उपस्थिति, कार्य—व्यवहार, आचरण	05	

अनुशंसित पुस्तकें –

1. बाखबर बेखबर : डा० मिथिलेश : दिशा इंटरेशनल पब्लिकेशन हाउस, दिल्ली

2. जनसंचार और हिन्दी पत्रकारिता : डा० अर्जन तिवारी : जय भारती, इलाहावाद

3. जनसंचार माध्यमों में हिन्दी : डा० चन्द्र कुमार

क्सासिकल पब्लिसिंग कम्पनी, नई दिल्ली 110015



स्नातक हिन्दी प्रतिष्ठा तृतीय वर्ष/सेमिस्टर 5

Elective / DSE 1/ विशेष पत्र

खंड : क और ख में किसी एक का अध्ययन

खंड : क हिन्दी की गद्य विधारें

DSE 1

इकाई 1. रेखाचित्र - ठकुरी बाबा : महादेवी वर्मा

इकाई 2. आत्मकथा – क्या भूलँ क्या याद कर्रूं : हरिवंशराय बच्चन

इकाई 3. व्यंग्य – भेड़ और भेड़िये : हरिशंकर परसाई

इकाई 4. रिपोर्ताज - लाल कनेर के फूल : धर्मवीर भारती

पाठ्य पुस्तकें –

1. हिन्दी गद्यधारा : हिन्दी विभाग, कोल्हान विश्वविद्यालय

खंड : ख **प्रेमचन्द**

इकाई 1. प्रेमचन्द : व्यक्तित्व एवं कृतित्व

इकाई 2. गबन : उपन्यास

इकाई 3. कहानियाँ – पंच परमेश्वर, मंत्र, कफन, सद्गति, ईदगाह

इकाई ४. प्रेमचन्द : कुछ विचार – कहानी : भाग 1 एवं भाग 2

अंक विभाजन

05

समय 3 घटे	पूर्णीक 70
1. वैकल्पिक प्रश्न	10 × 2 = 20
2. चार व्याख्यात्मक में से दो प्रश्नोत्तर अनिवार्य	2 × 5 = 10
3. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनिवार्य	2 × 5 = 10
4. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्या)	2 × 15 = 30

नोट - Mid Term Test -

1. आलोचनात्मक, वैकल्पिक,

2. Assignment/Seminar/Poster/Project/Quiz 10

3. उपस्थिति, कार्य-व्यवहार, आचरण





खंड क और ख में से कोई एक

खंड : क तुलसीदास

DSE 2

इकाई 1. तुलसीदास : व्यक्तित्व और कृतित्व	01 क्रेडिट
इकाई २. विनयपत्रिका : पाँच पद — ५, १०, ४५, ७२, ७८	01 क्रेडिट
इकाई 3. कवितावली : उत्तर कांड : पाँच छंद — 29, 35, 45, 67, 73	01 क्रेडिट
इकाई ४. गीतावली : पाँच पद — ७, १, १०, १८, २४	01 क्रेडिट

खंड : ख राष्ट्रीय काव्यधारा

इकाई 1. अवधारणा एवं विकास	01 क्रेडिट
इकाई 2. मैथिलीशरण गुप्त : व्यक्तित्व एवं कृतित्व	01 क्रेडिट
भारतीवंदना, मातृभूमि	
इकाई 3. माखनलाल चतुर्वेदी : व्यक्तित्व एवं कृतित्व	01 क्रेडिट
पुष्प की अभिलाषा, कैदी और कोकिला	
इकाई 4. रामधारी सिंह दिनकर : व्यक्तित्व एवं कृतित्व	01 क्रेडिट
हिमालय, किसको नमन कर्रुं	
पाठ्य पुस्तक	
1. हिन्दी गद्यधारा : हिन्दी विभाग, कोल्हान विश्वविद्यालय	

अंक विभाजन

	समय 3 घंटे	पूर्णांक 70
1. वैकल्पिक प्रश्न	10	0 × 2 = 20
2. चार व्याख्यात्मक में से दो प्रश्नोत्तर अनिवार्य	2	× 5 = 10
3. चार लघुत्तरीय में से दो प्रश्नोत्तर (25 शब्द) अनिवा	ार्य 2	$2 \times 5 = 10$
4. चार दीर्घत्तरीय में से दो प्रश्नोत्तर (400 शब्द संख्य	T) 2	× 15 = 30
नोट — Mid Term Test —		
1. आलोचनात्मक, वैकल्पिक,		15
2. Assignment/Seminar/Poster/Project/0	Quiz	10
3. उपस्थिति, कार्य—व्यवहार, आचरण		05





स्नातक हिन्दी प्रतिष्ठा तृतीय वर्ष/सेमिस्टर 6

Elective / DSE 3/ विशेष पत्र

खण्ड क और ख में से कोई एक

(क) विशेष पत्र – अनुवाद

इकाई 1. अनुवाद : परिभाषा, क्षेत्र एवं सीमायें

इकाई 2. अनुवाद का स्वरूप – कला या विज्ञान, अनुवाद तथा समतुल्यता का सिद्धान्त

इकाई 3. अनुवाद की प्रक्रिया और प्रविधि, विश्लेषण

इकाई 4. अनुवाद के विविध रूप - साहित्यिक अनुवाद, कार्यालयी अनुवाद, भावानुवाद

इकाई 5. अनुवाद की सार्थकता और प्रासंगिकता

(ख) विशेष पत्र – हिन्दी लोक (मौखिक) साहित्य

इकाई 1. लोक साहित्य : अवधारणा, सामान्य परिचय, लोक साहित्य और लिखित साहित्य

इकाई 2. लोक साहित्य के विविध प्रकार — लोकगीत, लोककथा, लोकगाथा, लोकनाट्य, लोकोक्तियाँ.

इकाई 3. लोकगीत — स्वरूप, विशेषतायें एवं प्रकार — संस्कार गीत, सोहर, विवाह गीत, देवगीत, ऋतु संबंधी गीत,

श्रम संबंधी गीत – रोपनी, कटनी, जॅतसार, उत्सव गीत

इकाई 4. लोककथा एवं लोकगाथा : स्वरूप, विशेषतायें एवं प्रकार

इकाई 5. लोकनाट्य : स्वरूप, विशेषतायें एवं प्रकार

समय एवं अंक विभाजन

	समय ३ घंटे	पूर्णाव	7 0
1. वैकल्पिक प्रश्न (वस्तुनिष्ठ)		10 × 2 =	: 20
2. चार लघुत्तरीय में से दो प्रश्नोत्तर अनिवार्य		2 × 10 =	= 20
3. चार दीर्घ उत्तरीय में से दो प्रश्नोत्तर		<u>2 × 15 :</u>	= 30
			70
नोट – 1. आन्तरिक मूल्यांकन			30
	कु	ल अंक	100

पाठ्य पुस्तकें –

1. अनुवाद विज्ञान : भोलानाथ तिवारी

2. अनुवाद विज्ञान : डा० बालेन्दुशेखर तिवारी

3. अनुवाद कला : सिद्धान्त और प्रयोग – डा० कैलाशचन्द्र भटिया

4. हिन्दी प्रदेश के नोगगीत : कृष्णदेव उपाध्याय

5. हिन्दी साहित्य का वृहत इतिहास : सोलहवां भाग, पं0 राहुल सांकृत्यायन

6. मगध की लोककथायें – डा० रामप्रसाद सिंह

7. मगही मंजूषा (लुप्तप्राय मगही गीत के संग्रह) संकलन – उदयशंकर शर्मा

8. मगही संस्कार गीत – डा० सम्पत्ति आर्यीणी



स्नातक हिन्दी प्रतिष्ठा तृतीय वर्ष/सेमिस्टर 6

Elective / DSE 4

लघु शोध लेखन

DSE 4

पाठ्यक्रम : हिन्दी भाषा साहित्य से संबंधित किसी विषय पर लघु शोध

अंक विभाजन पूर्णांक 150

शोध प्रारूप लेखन - 100

मौखिकी - 50

KOLHAN UNIVERSITY, CHAIBASA DEPARTMENT OF MATHEMATICS (For CBCS syllabus B. Sc.) **COMPOSITION OF BOARD OF STUDIES**

- 1. Chairman: Dr. T. C. K. Raman Head, University Department of Mathematics Kolhan University, Chaibasa, Mob. No.-9431758090
- 2. Dr.M.K.Singh (External Expert) Professor, Department of Mathematics, Ranchi University, RANCHI, Mob. No.-9835347289
- 3. Dr. D. R. Kuiry (Member) Associate Professor, University Department of Mathematics Kolhan University, Chaibasa. Mob.-9939372565
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(Dr.T.C.K.Raman) Associate Professor & Head, Department of Mathematics **KOLHAN UNIVERSITY , CHAIBASA.**

Dr. T. C. K. Raman Head & Chairman

Dr. M. K. Singh External Expert

Dr. D. R. Kuiry Member

Dr. M. A. Khan

Member

ACTING PRINCIPA ST. AUGUSTIND'S BON. Prasad MANOHARPUR, W SIMember



9. CREDIT SCHEME FOR CBCS IN B.SC. HONOURS

Course	Credits		
	Theory+ Practical	Theory + Tutorial	
I. Core Course			
(14 Papers) ·	14x4 = 56	14x5=70	
Core Course Practical / Tutorial			
(14.Papers)	14x2=28	14x1 = 14	
II. Elective Course			
(8 Papers)			
A.1. Discipline Specific Elective	4x4=16	4x5=20	
(4 Papers)			
A.2. Discipline Specific Elective			
Practical/ Tutorial	4x2=8	4x1=4	
(4 Papers)			
B.1. Generic Elective/			
Interdisciplinary	4x4=16	4x5=20	
(4 Papers)			
B.2. Generic Elective			
Practical/ Tutorial	4x2=8	$4 \times 1 = 4$	
(4 Papers)			
III. Ability Enhancement Courses			
1. Ability Enhancement Compulsory (Courses (AECC)		
(2 Papers of 2 credit each)	2x2=4	2x2=4	
Environmental Science			
English/MIL Communication			
2. Skill Enhancement Courses (SEC)			
(Minimum 2)	2x2=4	2x2=4	
(2 Papers of 2 credit each)			

*Institute should evolve a system/policy about General interest/Hobby/Sports/NCC/NSS/related courses on its own.

Total credit = 140

Total credit = 140

Dr. T. C. K. Raman Head & Chairman

Dr. K. N. Pradhan

Member

Dr. M. K. Singh External Expert Dr. D. R. Kuiry Member

ACTING PRINCIPAL ST. AUGUSTINDS BON. Prasad MANOHARPIJR, W SMember

^{*}Optional Dissertation or project work in place of one Discipline Specific Electivepaper (6 credits) in 6th Semester may be opted by the learner.

^{*}Wherever there is a practical there may not be tutorial and vice-versa.



9.1 SCHEME FOR CBCS IN B. SC. HONOURS

Semester	Core Course (14 Papers)	AbilityEnhancement Compulsory Course (AECC) (2 Papers)	Skill Enhancement Course (SEC) (2 Papers)	Elective: Discipline Specific Elective (DSE) (4 Papers)	Elective: Generic Elective (GE) (4 Papers)
1	C 1	AECC I MIL COMMUNICATION			GE 1
	C 2				Basic Mathematics
II	C 3	AECC 2 Environmental Science			GE 2
	C 4		3		Computer \('Application \)
	C 5		SEC 1		GE 3
III	C 6		Communicative		History &
	C 7		English		Culture of Jharkhand
	C 8		SEC 2		GE 4
IV	C 9		Personality		Economics /
	C 10		Development		
٧	C 11			DSE 1 .	
	C 12			DSE 2 .	
VI	C 13			DSE 3	
10000	C 14			DSE 4 · Project Work	

Dr. T. C. K. Raman Head & Chairman Dr. M. K. Singh External Expert Dr. D. R. Kuiry Member

ACTING PRINCIPAL ST. AUGUSTINDS BON. Prasad MANOHARPUR, W. SMEMBER

Dr. K. N. Pradhan Member Dr. M. A. Khan Member



11. CREDIT SCHEME FOR CBCS IN UNDERGRADUATE B.SC. PROGRAMME

Course	Credits		
	Theory + Practical	Theory + Tutorials	
I. Core Course	12x4= 48	12x5=60	
(12 Papers)			
04 Courses from each of the			
03 disciplines of choice			
Core Course Practical / Tutorial Practical/ Tutorials) 04 Courses from each of the 03 Disciplines of choice	12x2=24	12x1=12	
II. Elective Course	6x4=24	6x5=30	
(6 Papers)			
Two papers from each discipline of cho including paper of interdisciplinary natu			
Elective Course Practical / Tutorials	6x2=12	6x1=6	
(6 Practical / Tutorials*)	•		
Two Papers from each discipline of cho including paper of interdisciplinary nature.			
III. Ability Enhancement Courses			
1. Ability Enhancement Compulsory			
Courses (AECC)	2x2=4	2x2=4	
(2 Papers of 2 credits each)			
Environmental Science			
English/MIL Communication			
Skill Enhancement Courses (SEC) (4 Papers of 2 credits each)	4x2=8	4x2=8	
To	tal credit = 120	Total credit = 120	

^{*}Institute should evolve a system/policy about General interest/Hobby/Sports/NCC/NSS/related courses on its own.

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^{*}Optional Dissertation or project work in place of one Discipline elective paper (6credits) in 6th Semester may be opted by the learner.

^{*}Wherever there is practical there will be no tutorials and vice -versa.



11.1 SCHEME FOR CBCS IN UNDERGRADUATE B.SC. PROGRAMME

	0.0	Y		
Semester	Core Course			F
mes	(12 Paper)	Compulsory Course	Course (SEC) (4	Elective (DSE) (6
ster		(AECC) (2 Papers)	Papers)	Papers)
	DSC 1 A	AECC 1		
I	DSC 2 A	MIL		
	DSC 3 A	COMMUNICATION		
	DSC 1 B	AECC 2		
II	DSC 2 B	Environmental Science.		
	DSC 3 B	,		
	DSC 1 C			
III	DSC 2 C		SEC 1	
	DSC 3 C		Communicative	
			English	
	DSC 1 D			
IV	DSC 2 D		SEC 2	
	DSC 3 D		Personality	
			Development	
				DSE 1 A Theory
V			★ SEC 3	DSE 2 A Theory
			History & Culture of	DSE 3 A Practical
			Jharkhand	(10-)
			,	DSE 1 B Theory 🗸
VI		8	★ SEC 4 .	DSE 2 B Theory
			Computer	DSE 3 B Practical
			Application	(+0+30)

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Course Content of Mathematics **Under Choice Based Credit System (CBCS)**

Subject: Mathematics

Syllabus Scheme for CBCS in Undergraduate B.A./B.Sc. Honours Program.

There will be two Semesters in each year. In fifth & sixth semesters there are four Discipline Specific Elective (DSE) papers altogether. Among DSEMATH501A & DSEMATH501B only one is to be opted; similarly among DSEMATH502A and DSEMATH502B only one is to be opted & finally among DSEMATH603A & DSEMATH603B only one is to be opted. DSE 4 is concerned with project work.

1st Semester

CCMATH101 100 marks

Real Analysis & Matrices.

CCMATH102 100 marks

Differential Calculus & Analytical Geometry of Two dimensions.

2nd Semester

100 marks CCMATH203

Integral Calculus & Analytical Geometry of three dimensions.

CCMATH204 100 marks

Linear Programming & Statistics.

3rd Semester

CCMATH305 100 marks

Analysis I & Differential Equation.

100 marks CCMATH306

Higher Arithmetic & Group Theory.

CCMATH307 100 marks

Discrete mathematics & Metric Spaces.

4th Semester

CCMATH408 100 marks

Complex Analysis & Mechanics.

CCMATH409 100 marks

Analysis II & Abstract Algebra.

CCMATH410 100 marks

Programming in C & Numerical Analysis.

5th Semester

100 marks CCMATH511

Statics & Dynamics.

CCMATH512 100 marks

Fluid Mechanics & Special Functions.

DSEMATH501A

Linear Algebra & Linear Difference Equation. 100 marks

DSEMATH501B

Trigonometry, Vector Algebra & Vector Differentiation. 100 marks

DSEMATH502A

Theory of Equation & Set Theory.

or

DSEMATH502B

Mathematical Modeling & Topology

6th Semester

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CCMATH613

Tensor & Fourier Transform.

CCMATH614

Differential Equation.

DSEMATH603A

Number Theory & Probability.

100 marks

100 marks

100 marks

Or

DSEMATH603B

Life History & Contributions of Eminent Mathematicians.

DSEMATH604

Project work related to elective papers.

100 marks

Subject: Mathematics

Syllabus Scheme for CBCS in Undergraduate B.A./B.Sc. Program.

There will be two Semesters in each year. In fifth & sixth semesters there are two Discipline Specific Elective (DSE) papers altogether. Among DSE 1A(i) & 1A(ii) only one is to be opted; similarly among DSE 1B(i) and 1B(ii) only one is to be opted.

1st Semester

DSCMATH101A 100 marks

Real Analysis & Differential Calculus.

2nd Semester

DSCMATH201B 100

marks

Integral Calculus & Vector Analysis.

3rd Semester

DSCMATH301C 100 marks

Differential Equation, Group Theory & Analysis II.

4th Semester

DSCMATH401D 100

marks

Matrices & Abstract Algebra.

5th Semester

DSEMATH501A(i) 100 marks

Complex Analysis & Numerical Analysis.

DSEMATH501A(ii) 100 marks

Set Theory & Analytical Geometry of Two dimensions.

6th Semester

DSEMATH601B(i) 100 marks

Mechanics & Metric Space.

DSEMATH601B(ii) 100 marks

Life History & Contributions of Eminent Mathematicians.

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KOLHAN UNIVERSITY, CHAIBASA

Syllabus: Mathematics for B.A./B.Sc. Hons, Programme (End-Semester Examination ESE)

Mathematics (Hons.) - Semester I

Time - 3 hrs Paper I Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH101

UNIT I: Real analysis I Lecture - 24 **Questions-6**

- A.1: Axioms for R
- A.2: Limit of a sequence, monotonic sequences and their convergence, lim sup & lim inf, sub-sequence, algebraic operations of limit. Cauchy sequence, General Principle of convergence. Cauchy's 1st theorem on limits, Bolzano Weierstrass theorem.
- A.3: Notion of convergent and divergent series of real terms, Pringsheim's theorem, Comparison tests, Cauchy's root test.
- A.4: D' Alembert's ratio test. Alternating series and Leibnitz test, De-Morgan and Bertrand test, Cauchy condensation test. Gauss ratio test, integral test, absolutely convergent series.

UNIT II: Matrices Lecture - 24 **Questions-6**

- B.1: Mappings, Equivalence Relations and partitions. Congruence Modulo n.
- B.2: Symmetric, Skew Symmetric, Hermitian and Skew Hermitian Matrices. Elementary operations on matrices. Inverse of a Matrix. Linear independence of row and column matrices.
- B.3: Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, eigenvectors and the characteristics equation of a matrix. Cayley Hamiton theorem and its use in finding inverse of a matrix. Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations. Theorems on consistency of a system of linear equations.

Books Recommended:

- 1. Real Analysis: Dasgupta & Prasad / Lalji Prasad / K.K. Jha
- 2. Matrices: A.R. Vashishta / Shanti Narayan

Time - 3 hrs Paper II Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH102

UNIT I: Differential Calculus Lecture - 28 **Questions-7**

- A.1: Successive differentiation, Leibnitz theorem.
- A.2: Expansion, Partial Differentiation, Taylor's Theorem for functions of two Variables,
- A.3: Tangent and Normal, Curvature.
- A.4: Asymptotes, maxima and Minima of functions of two variables, Lagrange's multipliers.

UNIT II: Analytical Geometry of two dimensions Lecture - 24 **Questions-6**

- B.1: Change of rectangular axis, Conditions for the general equation of second degree to represent Parabola, Ellipse and Hyperbola and reduction into standard forms.
- B.2: Equations of tangents and normals (using calculus), Chord of contact, polar and pair of tangents.

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- B.3: Axes, Centre director circle in reference to general equation of conic.
- B.4: Polar equation.

Books Recommended:

- 1. Differential Calculus: Das & Mukherjee / Dasgupta / Lalji Prasad
- 2. Analytical Geometry of two Dimensions: J. Jha / Dasgupta & Prasad / Lalji Prasad

Mathematics (Hons.) - Semester II

Time – 3 hrs Paper III Full Marks – 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH203

UNIT I : Integral Calculus Lecture – 32 Questions-8

- A.1: Integration of rational and irrational functions, Evaluation of Definite integral, Reduction formula, Differentiation and Integration under the sign of integration.
- A.2: Evaluation of double and triple Integrals
- A.3: Point of Inflexion, double point, Curve tracing Length and area.
- A.4: Volumes and Surface area of solids of revolution.

UNIT II: Analytical Geometry of three dimensions Lecture - 16 Questions-4

- B.1: Review of Equation of Planes and Straight lines
- B.2: Shortest distance between lines, spheres, Cone, Cylinder

Books Recommended:

- 1. Integral Calculus: Das & Mukherjee / Dasgupta & Prasad / Lalji Prasad
- 2. Analytical Geometry of three dimension: Shanti Narayan / Dasgupta / Lalji Prasad

Time – 3 hrs Paper IV Full Marks – 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH204

UNIT I: Linear Programming Lecture - 24 Questions-6

- A.1: Convex sets in R2 and their properties, L.P.P., problem formulation, Graphical Method.
- A.2: Simplex method including Big M-method, Duality: Dual Simplex method.
- A.3: Transportation and Assignment.
- A.4: Deterministic replacement models, sequencing problems on two machines and n jobs.

UNIT II : Statistics Lecture – 24 Questions-6

- B.1: Measures of Skewness and Kurtosis
- B.2: Curve fitting and method of least square.
- B.3: Correlation and regression & their expectations and variance.

Books Recommended:

- 1. Linear Programming Problem: R.K. Gupta / Lalji Prasad
- 2. Mathematical Statistics: Kapur & Saxena

Mathematics (Hons.) - Semester III

Time – 3 hrs Paper V Full Marks – 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH305

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UNIT I: Analysis I Lecture - 24 A.1: Limit and Continuity: Limit, Continuity, Discontinuities, uniform continuity, properties of functions continuous in closed intervals, Functions of bounded variation.

- A.2: Derivability, Relationship with continuity, Roll's theorem, Lagrange's and Cauchy Mean Value theorem, Taylor's theorem, Maclaurin's theorem, remainder after n terms, Power series expansion of $(1+x)^n$, sinx, cosx and log (1+x) using suitable remainder after n terms.
- A.3: Riemann Integration Definition, Darboux's theorem I & II.
- A.4: Integrability condition, particular classes of bounded integerable function primitive, fundamental theorem, first and second Mean.

UNIT II: Differential Equation

Lecture - 24

Ouestions-6

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- B.1: First order higher degree Clairaut's form, singular solution orthogonal trajectories.
- B.2: Linear Equation with constant coefficient.
- B.3: Second order linear equations: solution by changing independent variable and by variation of parameters.
- B.4 : Simultaneous equation dx/P = dy/O = dz/R and Total differential equation pdx+Ody+Rdz = 0 together with their geometrical significance.

Books Recommended:

- Real Analysis: A.R. Vasistha / Lalji Prasad / Shanti Narayan
- 2. Differential Equation: J.N. Sharma / B.N. Prasad

Time - 3 hrs Full Marks - 70 Paper VI

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH306

Lecture - 20 **UNIT I : Higher Arithmetic Questions-4**

- A.1: Divisibility, H.C.F. Primes & Unique factorization in N & Z the Diophantine equation ax+by=c.
- A.2: Residue class, complete and reduced residue system, congruences and their properties, Fermat's theorem, Euler's theorem and Wilson's theorem.
- A.3: Algebraic congruences, Solution by inspection. Solution of ax=b (mod m), Chinese remainder theorem, non-linear algebraic congruency with respect to the modulus.

UNIT II: Group Theory Lecture - 32 **Questions-8**

- B.1: Definition of a group with examples and simple properties. Subgroups, Generation of groups.
- Cyclic groups, Coset decomposition, Lagrange's theorem, Homomorphism and B.2: isomorphism. Normal subgroups. Quotient groups. The fundamental theorem of Homomorphism. Permutation groups. Even and Odd permutations. The alternating group & Cayley's theorem.

Books Recommended:

- Basic Number Theory: S.B. Mallick 1.
- 2. Number Theory: Hari Kishan / B.N. Prasad
- 3. Introduction to Number Theory: Niven & Zukerman
- Modern Algebra: Surjeet Singh & Quazi Zameerudin / A.R. Vasistha 4.

Time - 3 hrs Paper VII Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

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CCMATH307

UNIT I: Discrete Mathematics Lecture - 24



- A.1: Sets and Propositions-Cardinality. Mathematical Induction. Principle of Inclusion and
- A.2: Relations and Functions Binary Relations. Equivalence Relations and partitions. Partial Order Relations and Lattices, chains and Antichains. Pigeon Hole Principle.
- A.3: Graphs and Planar Graph, basic terminology. Multigraphs. Weighted Graphs. Paths and Circuits. Shortest paths. Eurelian Paths and Circuits. Travelling Salesman Problem. Planer Graphs.
- A.4: Boolean Algebras Lattices and algebraic structures, Duality, Distributive and complemented Lattices. Boolean lattices and Algebras. Boolean Functions and Expression.

UNIT II: Metric Space

Lecture - 24

Questions-6

- B.1: Definition and example of metric spaces, Open sets, Interior closed Sets closure.
- B.2: Convergence, completeness, Bair's theorem, Cantor's Intersection theorem.
- B.3: Continuous maps, Uniform Continuity and related extensions.

Books Recommended:

- Discrete Mathematics: C.L. Lieu, Elements of Discrete Mathematics: McGraw Hill 1. International Ed.(12) Volumes 1 to 4 Published as Modulus in Applied Mathematics. Springer-Verlag 1982.
- 2. Topology: K.K. Jha / J.N. Sharma
- Mathematical Analysis: Shanti Narayan / Mallick Arora 3.

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5. Mathematics (Hons.) - Semester IV

Paper VIII Time - 3 hrs Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH408

UNIT I: Complex Analysis

Lecture - 24

Questions-6

- A.1: Real Functions for two variables, Simultaneous and iterated limits; continuity, partial derivatives, differentiability and related necessary and sufficient conditions.
- Functions of a complex variables: Limit, continuity, derivative Cauchy Riemann A.2: Equations analytic function, harmonic function, construction of analytic function Miln Thompson Method.
- A.3: Geometric Importance of some standard transformations e.g. w=z+c w=cz w=1/z. W=(az+b) / (cz+d) (bilinear).
- A.4: Conformal transformation as transformation effected by analytic functions special conformal transformations $w=z^z$, $w=e^z$, $w=\sin z$

UNIT II: Mechanics

Lecture - 24

Questions-6

- B.1: Reduction of system of coplanar forces, equation of resultant. Condition for equilibrium, astatic centre.
- B.2: Laws, Angles and cone of friction, equilibrium on a rough inclined plane, particle constrained to move on a rough curve under any given forces.
- B.3: Kinematics in two dimensions: tangential, normal, radial, transverse velocities and acceleration. Angular Velocity and acceleration. Rectilinear motion and simple pendulum: S.H.M., compounding of two S.H.M., Repulsive motion, motion under inverse square law.

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B.4: Rectilinear Motion (Kinetics): Newton's Law, work, KE, work Energy principle, impulse, Torque and angular momentum, conservation of energy, momentum and angular momentum, Hooke's law. Extension of an elastic string: horizontal & vertical case.

Books Recommended:

- Mechanics: Singh & Sen 1.
- 2. Complex Analysis : J.N. Sharma / Lalji Prasad

Full Marks - 70 Time - 3 hrs Paper IX

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH409

UNIT I: Analysis II Lecture - 24 **Questions-6**

- A.1: Convergence of improper integrals, Comparison Tests, Absolute convergence, Able's and Dirichlets Tests. Frullani's Integrals, Def. Duplication formula, inter-relation.
- A.2: Multiple Integrals via Dirichlet's Theorem Liouville's extension. Change of order of integration and change of variables.
- A.3: Vector Integration: Line Integral, Surface Integral, Green's theorem in R2, stoke,s theorem, Gauss divergence theorem.

UNIT II: Abstract Algebra

Lecture - 24

Questions-6

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- B.1: Rings, Preliminary Results, Special Kinds, subrings and Ideals.
- B.2: Quotient rings: Fields and Homomorphism.
- B.3: Field for quotient and embedding theorem, polynomial rings, Euclidian ring & Unique factorization in it.

Books Recommended:

- 1. Mathematical Analysis: Shanti Narayan / Mallick Arora
- 2. Integral Calculus: Williamson 3. Vector Calculus : Shanti Narayan

Time - 3 hrs Paper X Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH410

UNIT I: Programming in C

Lecture - 24

Ouestions-6 (Including Lab)

- A.1: Programmer's model of a computer. Algorithms. Flow Charts. Data Types. Arithmetic and input/output instructions.
- A.2: Decision control structures. Decisions statements.
- A.3: Logical and Conditional operators. Loop. Case control structures.
- A.4: Functions, Recursions, Preprocessors.
- A.5: Arrays, Puppeting of string. Structures. Pointers. File formatting.

UNIT II: Numerical Analysis Lecture - 24 **Questions-6** (CALCULATOR IS ALLOWED IN THIS PAPER)

- B.1: Solution of Equations: Bisection, regula-falsi, Newton's method, Root of Polynomials.
- B.2: Interpolation: Lagrange and Hermite Interpolation, divided differences Schemes, Interpolation Formula using Differences.
- B.3: Numerical Differentiation: Numerical formulas.
- B.4: Numerical Integration: Quadrature Formula Simpsons and Trapezoidal Rule.

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- B.5: Linear Equations: Direct methods for solving systems of linear equations (Gauss Elimination).
- B.6: Ordinary Differential equation: Euler Method, Single-step Method, Runge-Kutta's
- Method.

Books Recommended:

- Programming in ANCI in C.E. Balaguru Swamy. 1.
- 2. Numerical Analysis: J.B. Scarborough
- Introduction to Numerical Analysis: A. Gupta & S.C. Bose 3.

4. Mathematics (Hons.) - Semester V

Time - 3 hrs Paper XI Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH511

UNIT I: Statics Questions-6 Lecture - 24

- A.1: Conditions for equilibrium of forces in three dimension.
- A.2: Wrench pitch, Null Lines.
- A.3: Principle of Virtual work and its application in two dimensional cases.
- A.4: Common Catenary
- A.5: Stable equilibrium, energy test of stability (problems involving one variable only).

UNIT II: Dynamics Lecture - 24 **Questions-6**

- B.1: Motion of a particle under a central force, Differential equation of a central orbit in both polar and pedal co-ordinates.
- B.2: Newton's law of gravitation, planetary orbits, Kepler's laws of motion.
- B.3: Motion of projectile under gravity in a non-resisting medium.
- B.4: Motion of the mass centre and motion relative to the mass centre D'Alembert's principle.
- B.5: Two dimensional motion of a rigid body rotating about a fixed axis, compound pendulum.

Books Recommended:

- Statics: Loney
- 2. Dynamics: Loney / A.R. Vasishtha

Time - 3 hrs Paper XII Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH512

UNIT I: Fluid Mechanics Lecture - 24 **Questions-6**

- A.1: Nature and Properties of Fluid pressure, pressure of heavy liquids.
- A.2: Equilibrium of fluids under given system of forces.
- A.3: Centre of pressure.
- A.4: Thrust on plane and curved surfaces.
- A.5: Lagarangian and Eulerian methods, Equation of continuity.
- A.6: Euler's equation of motion for perfect fluid, Bernoulli's Theorem.

UNIT II: Special Functions Lecture - 24

B.1: Series solution: Ordinary point, singular point (regular), General Methods and forms of series solution (Indicial equation-frobenius method).

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Questions-6

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- [N.B. result of analysis regarding validity of series. Solution are to be taken for granted]
- B.2: Bessel's equation : Solution Recurrence formula for $J_n(x)$; generating function for $J_n(x)$, equations reducible to Bessel equation, Orthogonality of Bessel's functions.
- B.3: Legendre equation: Solution, Rodrigue's formula, Legendre polynomials, generating function for $P_n(x)$, Orthogonality of Legendre polynomials.
- B.4: Hypergeometric functions, special cases, Integral representation. Summation theorem.

Books Recommended:

- Hvdrostatics: J.P. Sinha
- Hydrodynamics: Ramsey / M.D. Raisingania 2.
- Advance differential equation: M. D. Raisinghania

Time - 3 hrs Paper DSE 1A Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSEMATH501A

UNIT I: Linear Algebra Lecture - 24 **Questions-6**

- A.1: Vector Space: Def. & properties, subspaces, linear dependence, dimension and basis of a finite dimensional vector space, Quotient space, Direct sums and complements matrices and change of basis.
- A.2: Inner product & norm in a I. S., properties of inner product, Schwartz inequality, orthogonal set, orthogonal basis and Gram-schmidt construction for finite dimensional inner product space.
- A.3: Linear transformation: Def, Sylvester Law of nullity, algebra of linear transformations, Dual spaces, principal of duality.
- A.4: Matrices and linear transformation, similar matrices, even matrices, diagonalisation Eigen root (Algebraic geometric and multiplicity).

UNIT II: Linear Difference Equation Lecture - 24

- Difference Equation Order, Solution of Difference Equation, Existence & Uniquencess theorem, solution of the form $Y_{n+1} = Ay_n + C$.
- B2: Linear Difference Equation with constant coefficient: Basic Definition. Combination of solution, Fundamental set of solution, Homogeneous Difference Equation & their solution (General & Particular), Special operator, variation of parameters.

Books Recommended:

- 1. Modern Algebra: Surjeet Singh & Quazi Zameeruddin (Ch. 11 & 12)
- Linear Difference Equation: R.K. Gupta & D.C. Agarwal. 2.

Time - 3 hrs Paper DSE 1B Full Marks - 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSEMATH501B

UNIT I: Trigonometry Lecture - 24 **Questions-6**

- A.1: De-Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions.
- A.2: Logarithm of a complex quantity. Expansion of trigonometric functions.
- A.3: Gregory's series.
- A.4: Summation of series
- A.4: Factorization.

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UNIT II : Vector Algebra

Lecture - 12

Questions-3

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B.1: Scalar and Vector product of three vectors. Product of four vectors. Reciprocal Vectors

UNIT III: Vector Differentiation Lecture – 12

Questions-3

- C.1: Point function, Differentiation of a vector function of a scalar variable, Gradient, Divergence and Curl and second order operators in Cartesian Co-ordinate system.

 Books Recommended:
 - 1 Higher Trigonometry by Lalji Prasad/Das Gupta
 - 2 Vector Analysis by Lalji Prasad/ Shanti Narayan

Time – 3 hrs Paper DSE 2A Full Marks – 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSEMATH502A

UNIT I (Set Theory)

lectures-20

Ouestion-5

- A-1: Index family of sets, Generalised set operations & De-Morgan Laws, set mappings.
- A-2: Bijection: Countable and Uncountable sets, Equivalence relation and related fundamental theorem on partition.

A-3: Partial order relation & related concepts of u. b., l. b., inf., sup., maximal element, minimal element & lattice (definition and examples only), statement of Zorn's lemma.

UNIT II (Theory of Equation)

lectures-28

Question-7

- B-1: Relations of root and their symmetric functions with coefficients.
- B-2: Transformation of equations, Descarte's rule of signs.
- B-3: Cardon's solution of a cubic equation.
- B-4: Descarte's solution of a bi-quadratic equation.
- B-5: Discriminant and nature of roots.

Books recommended

- 1 Theory of Equation Burnside & Penton/ Lalji Prasad
- 2 Set theory (Degree level) K. K. Jha.

Time – 3 hrs Paper DSE 2B Full Marks – 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSEMATH502B

UNIT I Mathematical Modeling Lectu

Lecture 28 Question-7

- A1: Difference & differential equation growth models: Single species population models, Population growth and age structure models
- A2: Higher order linear models: A model for the detection of diabetes
- A3: Non linear population growth models: Pray predator models, epidemic growth models
- A4: An application in environment: Urban waste water management planning models
- A5: Models from political sciences: Proportional representation(Cumulative & comparison voting) models

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B-1: Definition and examples of topological spaces. Open sets, interior. Closed sets closure, frontier

Lecture 20

- B-2: Convergence & Cauchy's sequences in topological spaces
- B-3: Continuous maps, Uniform continuity and related extensions.

Books Recommended:

UNIT II Topology

- 1 Mathematical Modelling by J N Kapoor
- 2 Topology by M L Khanna
- 3 Topology by K K Jha

Mathematics (Hons.) - Semester VI

Time – 3 hrs Paper XII Full Marks – 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH613

(A) Tensor Lecture – 22 Questions-7

Tensor Algebra: Transformation of co-ordinates, Contravarient & co-variant vector, Kronecker delta, Tensor of higher orders, Inner Product, conjugate tensor, Tensor field. Convariant Differentiation: Christoffells three index symbols, Transformation of symbol, covariant derivatives of scalar, Ricci theorem, Divergence, curl, Laplace operator.

(B) Fourier Transformation L

Lecture – 28 Questions-8

- B.1 : Infinite Fourier Transform : Infinite Fourier sine transform, Infinite Fourier cosine transform, Relation between Fourier & Laplace transform.
- B.2 : The Finite Fourier Transform & Integral : Finite Fourier sine transform, Finite Fourier cosine transform, Fourier Integral.

Books Recommended:

- 1. D.C. Agrawal, Tensor Calculus & Riemannian Geometry
- 2. Goel & Gupta, Laplace & Fourier Transform

Time – 3 hrs Paper XIV Full Marks – 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

CCMATH614

UNIT I : Differential Equation Lecture - 40

Questions-12

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- A.1: Partial differential equation, formation, linear p.d.e. of order 1-Lagrange's method.
- A.2: Non linear equation of order 1, four forms Charpits method, Jacobi Method.
- A.3: Homogeneous linear equation with constant co-efficient Rules of C.F. and P.I.
- A.4: Non-linear equations of second order, Monge's method.
- A.5: Boundary Value Problem: Derivation and solution of one dimensional wave equation and one dimensional heat equation.
- A.6: Laplace transform: Def, transformation of elementary functions, properties, inverse transform, transform derivatives and integrals, multiplication by tⁿ, division by t. Convolution theorem and application to differential equation.

Books Recommended:

- 1. Advanced Differential Equation : M.D. Raisingania
- 2. Differential equation: J.N. Sharma

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There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

Paper DSE 3A

DSEMATH603A

Time - 3 hrs

UNIT I: Number Theory Lecture – 24 Questions-6

- A 1: Perfect Numbers, Fermat Numbers, Abundant Deficient Numbers, F-number, Mersenne Number, Super perfect or transcendental numbers, Amicable numbers, Necessary & Sufficient condition for a positive integer to be an even perfect number(Euler's Theorem)
- A 2: Sum of squares of integers, Introduction, Sum of two square & related theorem, Expression of a prime number as the sum of two squares, Sum of more than two squares, Difference of two squares, Waring problem, The condition for an odd prime to be expressible as a sum of two squares.
- A 3: Arithmetical functions $\mathcal{T}(n)$ & $\mu(n)$ and related theorems.

UNIT II: Probability Lecture – 24 Questions-6

- B 1: Random experiment, Sample Space, Algebra of events, Probability of an event, Mutually exclusive events, addition theorem, Conditional probability, independent events, multiplication theorem,
- B 2: Total probability, Baye's theorem,
- B 3: Random Variables and Distribution Functions, Introduction, Distribution Functions of Discrete Variables, Distribution Functions of Continuous Variables, Mathematical Expectations,
- B 4: Binomial Distribution, Poisson's Distribution, Hypergeometric distribution, Normal & Negative binomial distribution,

Books Recommended:

- 1. Basic Number Theory: S.B. Mallick
- 2. Number Theory: Hari Kishan / B.N. Prasad
- 3. Theory of Numbers: Pundir & Pundir
- 4. Fundamental of Mathematical Statistics: Gupta & Kapoor

Time – 3 hrs Paper DSE 3B Full Marks – 70

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSEMATH603B:

Life History & Contributions of Eminent Mathematicians:

- 1: Aryabhatt
- 2: Archimedese
- 3: Srinivasa Ramanujam
- 4: G H Hardy
- 5: Euclid of Alexandria
- 6: Baron Augustin-Louis Cauchy
- 7: Pierre-Simon Laplace
- 8: Bertrand Russell
- 9: Pierre de Fermat
- 10: Leonhard Euler
- 11: Joseph Fourier
- 12: Karl Friedrich Gauss
- 13: Bernhard Riemann
- 14: G W Liebnitz
- 15: Sir Issac Newton

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Full Marks - 70RP

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16: Albert Einstein

Resource: Internet & Associated Contexts

Paper DSE 4

DSEMATH604

Project work of 100 Marks related to elective papers

Continuous Internal Assessment (CIA)- 30 Marks

The CIA must be conducted for every core paper as well as every DSE paper by the respective Department in the following manner.

- 1. Mid-Term test(Subjective/Objective Type)- 15 Marks
- 2. Assignment/Project/Poster/Quiz/Seminar- 10 Marks
- 3. Classroom attendance and active participation with leadership quality, good manners and articulation in Routine class instructional deliveries(Case studies/seminars/presentation- - 05 Marks

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KOLHAN UNIVERSITY, CHAIBASA

Syllabus: Mathematics for B.A./B.Sc. Programme. (End-Semester Examination ESE)

Mathematics - Semester I Semester I

Time – 3 hrs Paper I Full Marks – 100

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSCMATH101A

UNIT I : Real Analysis Lecture – 24 Questions-6

Limit of a sequence, monotonic sequences and their convergence, lim sup & lim inf, sub sequence, algebraic operations of limit. Cauchy sequence, General Principle of convergence. Notion of convergent and divergent series of real terms, Comparison tests, Cauchy's root test.

D'Alembert's ratio test. Alternating series and Leibnitz test, De-Morgan and Bertrand test, Cauchy condensation test.

UNIT I : Differential CalculusLecture – 24

Questions-6

Successive differentiation, Leibnitz theorem, Expansion, Partial Differentiation, Taylor's Theorem for functions of two Variables, Jacobian. Tangent and Normal, Curvature. Asymptotes, maxima and Minima of functions of two variables.

Books Recommended :

- 1. Real Analysis: Dasgupta & Prasad / Lalji Prasad / K.K. Jha
- 2. Differential Calculus: Das & Mukherjee / Dasgupta / Lalji Prasad

Semester II

Time – 3 hrs Paper II Full Marks – 100

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSCMATH201B

UNIT I : Integral Calculus Lecture – 28 Questions-7

Integration of rational and irrational functions, Evaluation of definite integral Reduction formula, Evaluation of double and triple Integrals. Curve tracing Length and area, Volumes.

UNIT II : Vector Analysis. Lecture - 20 Ouestions-5

Scalar and Vector product of three vectors. Product of four vectors. Reciprocal Vectors. Point function, differentiation of a vector function of a scalar variable, Gradient, Divergence and curl and second order operators in Cartesian Co-ordinate system.

Books Recommended:

- 1. Vector Calculus: Lalji Prasad / Shanti Narayan
- 2. Integral Calculus: Das & Mukherjee / Dasgupta & Prasad / Lalji Prasad

Semester III

Time – 3 hrs Paper III Full Marks – 100

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have

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to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSCMATH301c

UNIT I: Differential Equation Lecture - 16

Questions-4

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First order higher degree Clairaut's from, Singular solution orthogonal trajectories. Linear Equation with constant coefficients. Homogenous Linear Equation with variable coefficients Simultaneous equation dx/P=dy/Q=dz/R and Total diff. eqn. Pdx + Qdy + Rdz=0 together with their geometrical significance.

UNIT II: Group Theory

Lecture - 12

Ouestions-3

Definition of a group with examples and simple properties. Subgroups. Generation of groups. Cyclic groups. Coset decomposition. Lagrange's theorem.

UNIT III: Analysis II

Lecture - 20

Questions-5

Limit and Continuity: Limit, Continuity, discontinuities uniform continuity, properties of functions continuous in closed intervals.

Derivability, Relationship with continuity, Roll's theorem, Lagrange's and Cauchy Mean Value theorem, Taylor's theorem, Maclaurin's theorem, remainder after n terms.

Riemann Integration Definition, Oscillatory sum and integrable conditions. Intergrability of monotonic and continuous functions. Fundamental Theorem of integral calculus. Books Recommended:

- 1. Modern Algebra: A.R. Vasistha
- Differential Equation: Lalji Prasad / Dasgupta & Prasad 2.
- Real Analysis: Dasgupta & Prasad / Lalji Prasad 3.

Semester IV

Time - 3 hrs Full Marks - 100 Paper IV

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSCMATH401D

UNIT I: Matrices Questions-6 Lecture - 24

Symmetric, Skew Symmetric. Hermitian and Skew Hermitian metrices. Elementary Operations on matrices. Inverse of a Matrix. Rank of a matrix, solution of system of linear equations, characteristics equation of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.

UNIT II: Abstract Algebra

Lecture - 24

Ouestions-6

Normal subgroup, Factor group, Fundamental Theorem of homomorphism, Rings, Preliminary Results, Special Kinds, subrings and Ideals. Integral domain and Fields. Ring Homomorphism and isomorphism.

Books Recommended:

1. Matrices: A.R. Vasistha

2. Modern Algebra: A.R. Vasistha

Semester V

Time - 3 hrs DSE Full Marks - 100

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSEMATH501A(i)

UNIT I: Complex Analysis Lecture - 24 **Questions-6**

Real Functions of two variables. Simultaneous and iterated limits, continuity, partial derivatives, differentiability and related necessary and sufficient conditions. Functions of a

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Member

complex variables: Limit, continuity, derivative Cauchy-Riemann Equations Analytic function, harmonic function, construction of analytic function Milne Thompson Method, Geometric Some standard transformations e.g. w=z+c. w=cz, w=1/z. w=(az+b)/(cz+d) (bilinear). Conformal transformation as transformation effected by analytic functions.

UNIT II : Numerical AnalysisSolution of Equations : Bisection, regula-falsi, Newton's method, Root of Polynomials. Interpolation : Lagrange, divided differences Schemes, Interpolatin Formula using Differences. Numerical Differentiation : Numerical Quadrature formulas. Numerical Integration : Simpsons and Trapezoidal Rule.

Books Recommended :

- 1. Complex analysis: J.N. Sharma / Lalji Prasad
- 2. Introduction to Numerical Analysis: A. Gupta & S.C. Bose

DSEMATH501A(ii)

UNIT I: Analytical Geometry of two dimensionsLecture – 24 Questions-6
Change of rectangular axis, conditions for the general equation of second degree to represent parabola, Ellipse and Hyperbola and reduction into standard forms. Equations of tangents and normal (using calculus), Polar equation.

UNIT II : Set Theory Lecture – 24 Questions-6

Mappings, Equivalence Relations and partitions. Congruence modulo n, Generalized Union, Intersection, Complementation, countable and uncountable set, Schroeder and Bernstien theorem, concept of cardinal number.

Semester VI

Time – 3 hrs DSE Full Marks – 100

There will be three groups A, B & C. Group A is compulsory comprising of 10 objective type question for 2 marks each. Group B contains 8 short answer type questions of which 4 have to be answered for 5 marks each. Group C contains 4 questions of long answer type of which 2 have to be answered for 15 marks each.

DSEMATH601B(i)

UNIT I : Mechanics Lecture – 24 Questions-6

Reduction of system of coplanar forces, equation of resultant. Condition for equilibrium, static centre. Laws, Angles and cone of friction, equilibrium on a rough inclined plane, particle constrained to move on a rough curve under any given forces.

Kinematics in two dimensions : tangential, normal, radial, transverse velocities and acceleration. Angular Velocity and acceleration.

Rectilinear motion and simple pendulum: S.H.M., compounding of two S.H.M., Repulsive motion, motion under inverse square law.

Rectilinear Motion (kinetics): Newton's Law, work, K,E, work Energy principle, impulse, Torque and angular momentum, conservation of energy, momentum and angular momentum, Hooke's law.

UNIT II : Metric Space Lecture – 24 Questions-6

- B.1: Definition and example of metric spaces, Open sets, Interior Closed Sets closure.
- B.2 : Convergence, completeness, Bair's theorem, Cantor's Intersection theorem.
- B.3: Continuous maps, Uniform Continuity and related extensions.

Books Recommended:

Mechanics : Singh & Sen
 Metric Space : Lalji Prasad

DSEMATH601B(ii)

Life History & Contributions of Eminent Mathematicians:

- 1: Aryabhatt
- 2: Archimedese
- 3: Srinivasa Ramanujam
- 4: G H Hardy

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- 5: Euclid of Alexandria
- 6: Baron Augustin-Louis Cauchy
- 7: Pierre-Simon Laplace
- 8: Bertrand Russell
- 9: Pierre de Fermat
- 10: Leonhard Euler
- 11: Joseph Fourier
- 12: Karl Friedrich Gauss
- 13: Bernhard Riemann
- 14: G W Liebnitz
- 15: Sir Issac Newton
- 16: Albert Einstein

Resource: Internet & Associated Contexts

Continuous Internal Assessment (CIA)- 30 Marks

The CIA must be conducted for every DSC paper as well as every DSE paper by the respective Department in the following manner.

1. Mid-Term test(Subjective/Objective Type)- - 15 Marks

2. Assignment/Project/Poster/Quiz/Seminar- 10 Marks

3. Classroom attendance and active participation with leadership quality, good manners and articulation in Routine class instructional deliveries(Case studies/seminars/presentation- - - 05 Marks

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KOLHAN UNIVERSITY, CHAIBASA



दर्शनशास्त्र

University Department of Philosophy

CBCS Syllabus Of B.A. (Hons./ Major)

(Semester System)

W.E.F Session 2017-19

ACTING PRINCIPAL
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University Department of Philosophy Kolhan University, Chaibasa Syllabus in B.A. Philosophy (Hons.) according to CBCS

Semester-I	Course	Credit	Name of the papers
	CC-1	06	Indian Philosophy (Part-1)
20 Credits	CC-2	06	Ancient Greek Philosophy
	GE-1	06	
	AECC-1	02	MIL Hindi, Urdu, Eng., TRL, Beng.,
			(Syllabus framed by KU)

Semester -2	Course	Credit	Name of the papers
	CC-3	06	Indian Philosophy (Part-2)
20 Credits	CC-4	06	Modern Western Philosophy (Descartes to
			Kant)
	GE-2	06	
	AECC-2	02	Environmental Science
Semester -3	Course	Credit	Name of the papers
	CC-5	06	Indian Ethics
26 Credits	CC-6	06	Western Ethics
	CC-7	06	Deductive Logic
	GE-3	06	
	SEC-1	02	General Knowledge and Current Affairs
Semester -4	Course	Credit	Name of the papers
	CC-8	06	Indian Epistemology
26 Credits	CC-9	06	Western Epistemology
	CC-10	06	Inductive Logic
	GE-4	02	
	SEC-2		Personality development

Semester -5	Course	Credit	Name of the papers
	CC-11	06	Western metaphysics
25 Credits	CC-12	06	Indian Metaphysics
	DSE-1	06	Social Philosophy/ Meta-ethics
	DSE-2	06	Sankhya Karika / Symbolic Logic

Semester -6	Course	Credit	Name of the papers
	CC-13	06	Philosophy of Religion
24 Credits	CC-14	06	Modern Indian Philosophy
	DSE-3	06	Political Philosophy / Comparative
			Religion
-	DSE-4	06	Project work

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INDIAN PHILOSOPHY (PART – I)

PAPER : CC-1 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Basic features of Indian Philosophy.
- 2. Basic concepts of the Vedas and Upanishads: Atman, Brahman, Rta, Rna, Yajna.
- 3. Carvaka: Epistemology, Metaphysics and Ethics.
- 4. Jainism :Dravya, Jiva&Ajiva, Syadvada, Anekantavada, Bondage and Liberation.
- 5. Buddhism: Four Noble Truths, Doctrine of Momentariness, Theory of No Soul, Schools of Buddhism: Vaibhasika, Sautrantika, Yogacara, Madhyamika.

Suggested Readings:

- 1. M. Hiriyanna An outline of Indian Philosophy.
- 2. C. D. Sharma A Critical Survey of Indian Philosophy.
- 3. S. N. Dasgupta A History of Indian Philosophy, Vol. I, II
- 4. S. Radhakrishnan Indian Philosophy, Vol. I, II.
- 5. J. N. Sinha Indian Philosophy
- 6. हरेन्द्र प्रसाद सिन्हा–भारतीय दर्शन की रूपरेखा
- 7. बी० एन० सिंह -भारतीय दर्शन
- 8. चटर्जी एव दत्ता-भारतीय दर्शन
- 9. बलदेवउपाध्याय –भारतीय दर्शन

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ANCIENT GREEK PHILOSOPHY

PAPER : CC-2 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Early Greek Philosophy: Basic features of Greek Philosophy.
- 2. Milesians: Thales, Anaximander and Anaximenes. Heraclites, Pythagoraus
- 3. Socrates: Socratic Method and Theory of Knowledge.
- 4. Plato: Theory of Knowledge; Theory of Ideas.
- 5. Aristotle: Criticism of Plato's Theory of Ideas, Causation, Form and Matter, Potentiality and Actuality.
- 6. St. Augustime: Theory of Knowledge, Theology, Freedom of Will and Problem of Evil.
- 7. Thomas Aquinas: Reason & Faith, Proofs for the existence of God.

Suggested Readings:

- 1. C. D. Sharma Pashchatya Darshan
- 2. Y. Masih Modern Western Philosophy.
- 3. बी० एन० सिंह -पाश्चात्य दर्षन
- 4. के० एम० पी० वर्मा-पाश्चात्य दर्शन
- 5. सी० डी० शर्मा-पाश्चात्य दर्षन
- 6. नरेशप्रसादतिवारी-ग्रीक एवं मध्ययुगीनदर्शन
- 7. Frank Thilly A History of Western Philosophy.
- 8. W. T. Stace A Critical History of Greek Philosophy.

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PAPER: GE-1 CREDITS - 06

(Syllabus framed by Kolhan University, Chaibasa)

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ABILITY ENHANCEMENT COMPULSORY COURSE - 1

PAPER: AECC-1 Marks - 50 CREDITS - 02

MIL/ English Communication

Pass Marks - 20

(Syllabus framed by Kolhan University, Chaibasa)

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INDIAN PHILOSOPHY (PART – II)

PAPER: CC-3 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Nyaya Pramana, Pratyaksha, Anumana, Upaman&Shabda, God.
- 2. Vaisheshika Padartha, Draya, Guna, Karma, Samanya, Vishesha, Samavaya and Abhava.
- 3. Samkhya Satkaryavada, Prakriti&Purusha, Vikasvada, Bondage & Liberation.
- 4. Yoga Ashtanga Yoga & God.
- 5. Mimansa Theory of Karma.
- 6. Shamkaracharya Nirguna Brahman, Jagat, Atman, God & Maya.
- 7. Ramanujacharya Refutation of Mayavada, Sagun Brahman, Jiva, Liberation.

Suggested Readings:

- 1. M. Hiriyanna Outlines of Indian Philosophy.
- 2. C. D. Sharma A Critical Survey of Indian Philosophy.
- 3. S. N. Dasgupta A History of Indian Philosophy, Vol. I to V.
- 4. S. Radhakrishnan Indian Philosophy Vol. I & II.
- 5. प्रो० हरेन्द्र प्रसाद सिन्हा–भारतीय दर्शन की रूपरेखा
- 6. प्रो0 बी0 एन0 सिंह -भारतीय दर्शन
- 7. चटर्जी एव दत्ता-भारतीय दर्शन
- 8. बलदेवउपाध्याय –भारतीय दर्शन

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MODERN WESTERN PHILOSOPHY

PAPER : CC-4 CREDITS - 06

Students are required to answer five questions out of eight:

- Descartes Method of Doubt, CogitoErgo Sum, Mind Body Relation,
 Interactionism, Proofs for the Existence of God.
- 2. Spinoza Substance, Attributes, Modes.
- 3. Leibnitz Theory of Monads, Doctrine of Pre Established Harmony, God.
- 4. Locke Refutation of innate ideas. They of knowledge, substance.
- 5. Berkeley Refutation of Matter, Rejection of Primary & Secondary Qualities, Esse-Est-Percipi.
- 6. Hume Impression & Ideas, Causality, Skepticism.
- 7. Kant Kant's Criticism, Distinction between Analytic and Synthetic Judgement, Synthetic A-Priori Judgement, Space & Time.
- 8. Hegel Dialectical Methods, Absolute idealism.

Suggested Readings:

- 1. Frank Thilly A History of Western Philosophy.
- 2. W. T. Stace A Critical History of Greek Philosophy.
- 3. बी० एन० सिंह -पाश्चात्य दर्शन
- 4. याकुबमसीह–आधुनिकपाश्चात्य दर्शन
- 5. के0 एम0 पी0 वर्मा-पाश्चात्य दर्शन
- 6. डॉ० नरेशप्रसाद तिवारी-ग्रीक एवं मध्ययुगीनदर्शन
- 7. चन्द्रधरशर्मा-पाश्चात्य दर्शन

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PAPER: GE-2 CREDITS - 06

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ABILITY ENHANCEMENT COMPULSORY COURSE - II

PAPER: AECC-II Marks - 50 CREDITS - 02

Pass Marks - 20

Environmental Science (Syllabus framed by Kolhan University, Chaibasa)

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B.A. PART – II (PHILOSOPHY HONOURS) SEMESTER – III INDIAN ETHICS

PAPER: CC-5 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Upanishads Law of Karma and Salvation.
- 2. Purusharthas Dharma, Artha, Kama, Moksha.
- 3. Ethics of Bhagvadgita Nishkama Karma, Swadharma, SthitPragya, Yagya&Loksangraha.
- 4. Jaina Ethics Mahavrata, Anuvrata, Triratna.
- 5. Buddhist Ethics Eight Fold Path.
- 6. Dharma Its Meaning & Classification, Sadharan Dharma, Varnashrama
 Dharma

Suggested Readings:

- 1. Mackenzie, J. S. A Manual of Ethics (Also Hindi Translation by A. K. Sinha)
- 2. Verma, A. K. PramabhikaAcharasastra.
- 3. Sinha, J. N. Nitisashtra.
- 4. Pathak Diwakar BhartiyaNeetishashtra.
- 5. Singh, B. N. Neetishashtra.
- 6. Atreya, B. L. BhartiyaNeetishashtra.
- 7. S. Radhakrishnan Bhagwadgita.
- 8. Maitra, S. K. Ethics of Hindus.

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B.A. PART – II (PHILOSOPHY HONOURS) SEMESTER – III WESTERN ETHICS

PAPER: CC-6 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Nature and Scope of Ethics.
- 2. Psychological Basis of Ethics Voluntary and Non Voluntary Action.
- 3. Nature and Object of Moral Judgment, Postulates of Morality.
- 4. Teleological Ethics Hedonism, Utilitarianism Mill & Bentham.
- 5. Deontological Ethics Kant.
- 6. Virtue Ethics Plato and Aristotle.
- 7. Theories of Punishment.

Suggested Readings:

- 1. W. Lillie An Introduction to Ethics.
- 2. J. Hospers Human Conduct.
- 3. W. Frankena Ethics.
- 4. Kant Ground Work of the Metaphysics of Morals.
- 5. J. S. Mill Utilitarianism.
- 6. डॉ० वेदप्रकाशवर्मा-नीतिशास्त्र के मूलसिद्धान्त
- 7. डॉ० बी० एन० सिंह -नीतिशास्त्र
- 8. डॉ० ए० के० वर्मा-प्रारम्भिक आचारशास्त्र
- 9. डॉ० शांतिजोशी-नीतिशास्त्र

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B.A. PART – II (PHILOSOPHY HONOURS) SEMESTER – III DEDUCTIVE LOGIC

PAPER: CC-7 CREDITS - 06

1. Nature and Scope of Logic.

- 2. Laws of Thought.
- 3. Term Definition and Classification of Terms, Distribution of Terms
- 4. Proposition and its Kinds.
- 5. Opposition of Proposition.
- 6. Immediate Inference Conversion, Obversion, Contraposition and Inversion.
- Mediate Inference Syllogism : Categorical Syllogism Figures and Valid Moods.

Suggested Readings:

- 1. Copi. I. M. Introduction to Logic.
- 2. Mitchell Introduction to Logic.
- 3. Roy B. N. Textbook of Deductive Logic.
- 4. रॉय बी० एन० -निगमनतर्कशास्त्र
- 5. वर्मा, अशोककुमार-निगमनतर्कशास्त्र
- 6. नारायण जगदीश-निगमनतर्कशास्त्र

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PAPER: GE-3 CREDITS – 06

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GENERAL KNOWLEDGE & CURRENT AFFAIRS

PAPER : SEC-1 Mark- 50 CREDITS - 02

Pass Marks - 20

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B.A. PART – II (PHILOSOPHY HONOURS) SEMESTER – IV INDIAN EPISTEMOLOGY

PAPER: CC-8 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Cognition Nature of Cognition, Valid and Invalid Cognition.
- 2. Prama Nature of Prama, Kinds of Prama and Aprama.
- Pramana Definition, Kinds Pratyaksa, Anumana, Sabda, Upmana,
 Arthapatti, Anuplabhdhi
- 4. Pramanyavada SwatahPramanyavada, ParatahPramanyavada.
- 5. Pramanasampalava and Pramanavyavastha.
- 6. Theories of Perceptual Error Khyativada, Khyatipanchaka.

Suggested Readings:

- 1. C. Bhattacharya The elements of Indian Logic and Epistemology.
- 2. M. Hiriyanna Indian Philosophy.
- 3. J. N. Sinha Indian Philosophy.
- 4. Neelima Sinha भारतीय ज्ञानमीमांसा
- 5. Sharma, N. K. भारतीय दार्शनिक समस्यायें
- 6. Raja, C K. Some Fundamental Problems in Indian Philosophy.
- 7. शोभा निगम-भारतीय दर्शन

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WESTERN EPISTEMOLOGY

PAPER: CC-9 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Knowledge Definition& Kinds, Knowledge by acquaintance and Knowledge by Description.
- 2. Skepticism and Justification of Knowledge.
- 3. Knowledge and Belief.
- 4. Theories of Knowledge Rationalism, Empiricism, Criticism.
- 5. Apriori and Aposteriori Knowledge.
- 6. Theories Concerning Sense Organs and Their Objects Realism, Idealism.
- 7. Theories of Truth Correspondence, Coherence, Pragmatic.

Suggested Readings:

- 1. Ayer, A. J. The Problem of Knowledge.
- 2. Ayer, A. J. The Central Questions of Philosophy.
- 3. Sharma, R. N. पाश्चात्य दार्शनिकविवेचना
- 4. Tiwary, K. N. तत्वमीमांसा एवं ज्ञानमीमांसा
- 5. Prasad, Rajendra दर्शनशास्त्र की रूपरेखा
- 6. Ewing, A. C. Fundamental Questions of Philosophy.
- 7. Sharma, R. N. पाश्चात्य दर्शन की समस्या

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B.A. PART – II (PHILOSOPHY HONOURS) SEMESTER – IV INDUCTIVE LOGIC

PAPER: CC-10 CREDITS - 02

1. Scientific Induction & Induction per Simple Enumeration.

- 2. Formal and Material Grounds of induction
- 3. Material Grounds of Induction Observation & Experiment.
- 4. Cause, Effect Reasoning.
- 5. Hypothesis Valid & Invalid, Definition, kinds and conditions of valid hypothesis.
- 6. Analogy Kinds of Analogy, Strength of Analogy.

Suggested Readings:

- 1. Roy B. N. Textbook of Inductive Logic.
- 2. वर्मा, अशोककुमार-आगमनतर्कशास्त्र
- 3. मल्लिकजगदीशनारायण –आगमनतर्कशास्त्र
- 4. तिवारीकेदारनाथ—आगमनतर्कशास्त्र
- झा गंगादत्त—आगमनतर्कशास्त्र
- नारायण जगदीश—आगमनतर्कशास्त्र

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PAPER: GE-4 CREDITS – 06

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B.A. PART – II (PHILOSOPHY HONOURS) SEMESTER – IV PERSONALITY DEVELOPMENT

PAPER: SEC-2 MARK- 50 CREDITS – 02

Pass Marks - 20

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPIJR, W SINGHBHUM



WESTERN METAPHYSICS

PAPER: CC-11 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Metaphysics Its Nature and Scope.
- 2. Nature of Ultiamte Reality Materialism, Idealism, Dualism & Neutralism.
- 3. Number of Ultimate Reality Monism, Dualism & Pluralism.
- 4. Space & Time Objective & Subjective Perspectives.
- 5. Causality Aristotle, Mill & Hume.
- 6. Mind Body Relation Descartes, Spinoza & Leibnitz.
- 7. Universal Realism, Conceptualism & Nominalism.

Suggested Readings:

- 1. K. Lehrer Knowledge.
- 2. केदारनाथतिवारी-तत्त्वमीमांसा एवंज्ञानमीमांसा
- 3. राजेन्द्रप्रसाद-दर्शनशास्त्र की रूपरेखा
- 4. अशोककुमारवर्मा-संक्षिप्तसामान्य दर्शन
- 5. S. C. Chatterjee Problems of Philosophy.

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B.A. PART – III (PHILOSOPHY HONOURS) SEMESTER – IV INDIAN METAPHYSICS

PAPER: CC-12 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Padartha Buddha, Jaina, Vaisesika and Samkhya.
- 2. God The Concept of God in Nyaya, Yoga &Ramanuja.
- Man Self as Atman, Nairatmyavada, Atman and Jiva, The Jiva as Karta, Bhokta and Jnata – Different Perspectives (Carvaka, Budha, Jaina, Samkhya, Vedanta)
- 4. Universals Nyaya Vaisesika, Jaina, Vedanta.
- 5. Causation Nyaya, Buddha, Samkhya, Samkara.

Suggested Readings:

- 1. Stephen, H. Phillips Classical Indian Metaphysics, Delhi, MotilalBanarsidas, 1997.
- 2. डा० नन्दिकशोर शर्मा–भारतीय दार्शनिक समस्याएँ, राजस्थान हि० ग्र०
- 3. SaraswatiChenna Concepts of Indian Philosophy
- 4. Satkari Mukherjee The Buddhist Philosophy of Universal Flux.
- 5. S. N. Dasgupta भारतीय दर्शन का इतिहास

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B.A. PART – III (PHILOSOPHY HONOURS) SEMESTER – V SOCIAL PHILOSOPHY

PAPER: DSE-1 CREDITS – 06

Students are required to answer five questions out of eight:

- Social Philosophy Nature & Scope, Its Relation to Sociology, Social Psychology & Politics.
- Individual & Society Sociological Analysis, Relation between Individual & Society.
- Social Change Meaning & Conditions of Social Change, Tradition & Modernity.
- 4. Social Institutions Family, Function, kinds. Marriage Kinds of Marriage & Divorce
- 5. Property Private & Public Property, Arguments in favour & against of Private Property.
- 6. Gender Discrimination Female Foeticide, Land and property rights, Empowerment.

Suggested Readings:

- 1. Dr. Vatsyayan Social Philosophy
- 2. डॉ0 रमेन्द्र-समाज, राजनीतिऔर धर्मदर्षन
- 3. डॉ० अशोककुमारवर्मा-प्रारम्भिकसमाज एवं राजनीतिदर्शन
- 4. डॉ० राजेन्द्रप्रसाद-समाजदर्शन

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B.A. PART – III (PHILOSOPHY HONOURS) SEMESTER – V META – ETHICS

PAPER: DSE-1 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Nature, Definition and Scope of Meta Ethics.
- 2. Classication of Meta Ethical Theories Cognitive & Non Cognitive.
- 3. Ethical Naturalism Basic features, Kinds and Limits
- 4. Non Naturalism Basic features and Limits, G. E. Moore's Non Naturalism.
- 5. A. J. Ayer's Emotivism.
- 6. C. L. Stevenson's Emotivism.
- 7. R. M. Hare's Prescriptivism.

Suggested Readings:

- 1. वेदप्रकाषवर्मा, अधिनीतिषास्त्र के मूलसिद्धान्त, एलायड ।
- 2. नित्यानन्दमिश्रा, नीतिषास्त्र –सिद्धान्तऔरप्रयोग, मोतीलाल ।
- 3. A. J. Ayer, Philosophical Essays.
- 4. C. L. Stenenson, Ethics and Language, Yale University Press.
- 5. R. M. Hare, The Language of Morals, O.V.P.

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B.A. PART – I (PHILOSOPHY HONOURS) SEMESTER – V SYMBOLIC LOGIC

PAPER:DSE-2 CREDITS-06

Students are required to answer five questions out of eight:

- 1. Nature and Utility of Symbolic Logic.
- 2. Truth and Validity.
- 3. Nature of Arguments, Deductive and Inductive Argument.
- 4. Compound Statements Conjunction, Negation, Disjunction and Conditional Statements, Truth Table.
- 5. Argument Forms and Truth Tables.
- Statement Forms Tautology, Contingent and Contradictory Statements,
 Material and Logical Equivalence.
- 7. Formal Proofs of Validity Priliminary and Replacement Rules, Conditional Proof, Indirect Proof.
- 8. Boolean Interpretation of Proposition, Venn Diagram, Technique of Testing the Validity of Syllogism.

Suggested Readings:

- 1. Copi. I. M. Introduction to Logic.
- 2. Mitchell Introduction to Logic.
- 3. वर्मा, ए० के० -प्रतीकात्मक, तर्कशास्त्र प्रवेशिका
- 4. Pandey, S. L. TarkaShashtraParichaya.
- 5. Sharma, R. N. Symbolic Logic.

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SAMKHYAKARIKA (ISHWARKRISHNA)

PAPER: DSE-2 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. The Three Kinds of Dukkha Adhibhautika, Adhidaivika and Adhyatmika.
- 2. Pramanas Their Nature and Objects.
- 3. Prakrti Its Subtle Nature, Proofs for the Existence of Mulaprakrti.
- 4. Gunas Sattva, Rajas and Tamas, Their Nature and Function.
- 5. Satkaryavada Its Nature and Proofs.
- 6. Purasa Nature and Proofs, Plurality of Purusa.
- 7. The Evolution of Prakrti, Systematic Evolution of Twenty Three Tattvas from Prakrti. Nature and Functions of Each Evolutes.
- 8. Bondage and Liberation of Prakrti.

Suggested Readings:

- 1. GanganathJha (ed. Tr. Vacaspati Mishra's Samkhyatattvakaumudi, Poona.
- 2. डॉ० बैजनाथपाण्डेय –सांख्यकारिका, भारतीय वि० प्र० ।
- 3. डॉ० रामकृष्ण आचार्य-सांख्यकारिका, साहित्य भंडार ।

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PHILOSOPHY OF RELIGION

PAPER :CC-13 CREDITS – 06

Students are required to answer five questions out of eight:

- 1. Nature, Scope and Utility of Philosophy of Religion, Philosophy of Religion and Theology.
- 2. Origin and Development of Religion.
- 3. Phases of Religion Primitive, Naturalistic and Universal Religion.
- 4. Religious Consciousness.
- 5. Grounds of Religious Belief Reason, Faith, Revelation and Mystic Experience.
- 6. Proofs for the Existence of God Ontological, Cosmological, Teleological and Moral.
- 7. Attributes of God.
- 8. Problem of Evil.
- 9. Immortality of Soul. (Immorality of Soul)

Suggested Readings:

- 1. H. P. Sinha Dharma Darshan Ki Rooprekha.
- 2. Galloway The Philosophy of Religion.
- 3. H. N. Mishra Dharm Darshan KaParichaya.
- 4. V. P. Verma Dharm Darshan.
- 5. D. M. Edward Philosophy of Religion.
- 6. John Caird An Introduction to the Philosophy of Religion.
- 7. R. Bhagavan Das Essential Unity of all religions.

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B.A. PART – III (PHILOSOPHY HONOURS) SEMESTER – VI

MODERN INDIAN PHILOSOPHY (PART – 1)

PAPER :CC-14 CREDITS - 06

Students are required to answer five questions out of eight:

- 1. Salient Features of Modern Indian Philosophy.
- 2. Swami Vivekanand The Absolute, Maya, Soul and Its Liberation, Practical Vedanta Universal Religion.
- 3. Aurobindo Cosmic Evolution, The Supermind, Soul and Its Liberation.
- 4. MahatmaGandhi Truth, God, Principle of Non Violence, Satyagraha, Concept of Religion.
- 5. Rabindra Nath Tagore Truth, God, Nature of Man, Self and Maya
- 6. S. Radhakrishnan Absolute Reality intellect & Intuition, world, Soul, God, Human Destiny.
- 7. Md. Iqbal God, Self, theory of destiny, world.

Suggested Readings:

- 1. R. S. Srivastava SamakalinaBhartiya Darshan.
- 2. B. K. Lal Samakalina, Bhartiya Darshan
- 3. Swami Vivekanand Teachings of Swami Vivekananda
- 4. Sri Aurobindo The Life Divine
- 5. D. M. Dutta Philosophy of Mahatma Gandhi
- 6. P. Srivastava Sri AurobindoAur Mahatma Gandhi Ke Darshan KaSamikshatmakAdhayayan.
- 7. Dr. Saraswati Mishra Swami Vivekananda and Synthesis of World Religion.



B.A. PART – III (PHILOSOPHY HONOURS) SEMESTER – VI POILITICAL PHILOSOPHY

PAPER :DSE -3(I) CREDITS -06

Students are required to answer five questions out of eight:

- Political Philosophy Nature & Scope, Its Relation to Political Science & Social Philosophy.
- 2. Political Ideals Equality, Justic, Liberty & Soverignity
- 3. Methods of Political Action Constitutionalism, Revolution, Terrorism & Satyagraha.
- 4. Political Idealogies Democracy Merits & Demerits of Democracy, Marxism, Sarvodaya. Socialism, Humanism.

Suggested Readings:

- 1. जयप्रकाशनारायण -समाजवाद, सर्वोदय और लोकतन्त्र
- 2. डॉ० रमेन्द्र-समाज और राजनीतिदर्शन
- 3. डॉ० श्यामवृक्ष मौर्य-समाज और राजनीतिदर्शन
- 4. प्रताप सिंह –गाँधीजीकादर्शन ।



B.A. PART – III (PHILOSOPHY HONOURS) SEMESTER – VI

COMPARATIVE RELIGION

PAPER :DSE-3(II) CREDITS – 06

Students are required to answer five questions out of eight:

- 1. Nature, Scope and Utility of Comparative Religion.
- 2. Worship and Prayer in Hinduism, Christianity and Islam.
- 3. Concept of God in Hinduism, Christianity, Islam and Sikhism.
- 4. Immortality of Soul and Rebirth in Hinduism.
- 5. Sin atonement in Hinduism, Christianity and Islam.
- Concept of Salvation and Pathways of Salvation in Hinduism, Christianity,
 Islam and Sikhism.
- 7. The Unity of Religion S. Radhakrishnan and Bhagwan Das.
- 8. Secularism Nature of Secularism, Nature of Secular Society.
- 9. Sufism, its origin, meaning, schools of Sufism.

Suggested Readings:

- 1. R. S. Srivastava Comparative Religion.
- 2. R. S. Srivastava Gita, Bible and Quran a Comparative Study.
- 3. S. Radhakrishnan Eastern Religion and Western Thought.
- 4. हरेन्द्रप्रसादसिन्हा— धर्मदर्शन की रूपरेखा
- 5. हृदय नारायण मिश्र-तुलनात्मक धर्म
- 6. भगवानदास- धर्मो की मूलभूत एकता ।
- 7. R. Tagore Religion of Man, London Unwin Books, 1983.
- 8. Dr. Mir Valiuddin The Quranie Sufism.



B.A. PART – III (PHILOSOPHY HONOURS) SEMESTER – VI PROJECT WORK

PAPER :DSE-4 CREDITS – 06



KOLHAN UNIVERSITY, CHAIBASA

Proposed syllabus For B.Sc. (Honours) PHYSICS

UNDER CHOICE BASED CREDIT SYSTEM (CBCS)

From

Academic Session 2017-2018



COURSE STRUCTURE (PHYSICS-HONOURS)

S.no.	Course	Credits	
	CORE COURSE		
1	(14 Papers, C1 to C14)	14×4= 56	
1.	Core Course Practical		
	(14 Papers, C1 Prac. To C14 Prac.)	$14 \times 2 = 28$	
	ELECTIVE COURSE		
	(8 Papers)		
	Discipline Specific Elective		
2.	(4 Papers, DSE 1 to DSE 4)	4×4= 16	
	Discipline Specific Elective Practical (DSE 1 Prac. To		
	DSE 4 Prac.)	$4 \times 2 = 8$	
	GENERIC ELECTIVE (Mathematics)		
	Generic Elective (Theory)		
3.	(4 Papers, GE 1 to GE 4)	5×4= 20	
	Generic Elective (Tutorial)		
	(4 Papers, GE 1 Tut. to GE 4 Tut.)	1×4= 4	
	ABILITY ENHANCEMENT COURSES (A	EC)	
	· ·	20)	
	Ability Enhancement Compulsory (2 Papers)		
	Environmental Science	$2 \times 2 = 4$	
4.	English/MIL Communication		
	Ability Enhancement Elective (Skill based)		
	(2 Papers)	$2\times2=4$	
	TOTAL	140	
	TOTAL	140	



PROPOSED SCHEME FOR CHOICE BASED CREDIT SYSTEM IN B. Sc. Honours (PHYSICS)

SEM	CORE COURSE (14 Papers)	AEC Compulsory Course (AECC) (2 Papers)	AEC Elective Course (SEC) skill based (2 Papers)	Elective DSE (4 Papers)	Elective Generic (4 Papers)	Total Credits
I	Mathematical Physics-I (4+2 = 6 credits) Mechanics (4+2= 6 credits)	Eng./MIL Comm ⁿ / Env. Sc. (2 credits)			GE-1 (6 credits)	20
П	Electricity & Magnetism (4+2= 6 credits) Waves and Optics (4+2= 6 credits)	Env. Sc./ Eng./MIL Comm ⁿ (2 credits)			GE-2 (6 credits)	20
Ш	Mathematical Physics–II (4+2= 6 credits) Thermal Physics (4+2 =6 credits) Digital Systems and Applications (4+2 =6 credits)		SEC-1 (2 credits)		GE-3 (6 credits)	26
IV	Mathematical Physics–III (4+2 = 6 credits) Elements of Modern Physics (4+2 = 6 credits) Analog Systems & Applications (4+2 = 6 credits)		SEC-2 (2 credits)		GE-4 (6 credits)	26
V	Quantum Mechanics and Applications (4+2 = 6 credits) Solid State Physics (4+2 = 6 credits)			DSE-1 (6 credits) DSE-2 (6 credits)		24
VI	Electromagnetic Theory (4+2 = 6 credits) Statistical Mechanics (4+2 = 6 credits)			DSE-3 (6 credits) DSE-4 (6 credits)		24
Credits	84	04	04	24	24	140





SEM	COURSE OPTED	COURSE NAME	CREDITS
	Ability Enhancement Compulsory Course-I	Eng./MIL commns/ Env. Sc.	2
	Core course-I	Mathematical Physics-I	4
	Core Course-I Practical/Tutorial	Mathematical Physics-I Lab	2
I	Core course-II	Mechanics	4
	Core Course-II Practical/Tutorial	Mechanics Lab	2
	Generic Elective -1	GE-1	4
	Generic Elective -1 Practical/Tutorial	GE-1 Lab	2
	Ability Enhancement Compulsory Course-II	Env. Sc./ Eng./MIL commns	2
	Core course-III	Electricity and Magnetism	4
	Core Course-III Practical/Tutorial	Electricity and Magnetism Lab	2
II	Core course-IV	Waves and Optics	4
	Core Course-IV Practical/Tutorial	Waves and Optics Lab	2
	Generic Elective -2	GE-2	4
	Generic Elective -2 Practical/Tutorial	GE-2 Lab	2
	Core course-V	Mathematical Physics-II	4
	Core Course-V Practical/Tutorial	Mathematical Physics-II Lab	2
	Core course-VI	Thermal Physics	4
	Core Course-VI Practical/Tutorial	Thermal Physics Lab	2
III	Core course-VII	Digital Systems and Applications	4
	Core Course-VII Practical/Tutorial	Digital Systems & Applications Lab	2
	Skill Enhancement Course -1	SEC-1	2
	Generic Elective -3	GE-3	4
	Generic Elective -3 Practical/Tutorial	GE-3 Lab	2
	Core course-VIII	Mathematical Physics III	4
	Course-VIII Practical/Tutorial	Mathematical Physics-III Lab	2
	Core course-IX	Elements of Modern Physics	4
	Course-IX Practical/Tutorial	Elements of Modern Physics Lab	2
IV	Core course-X	Analog Systems and Applications	4
	Course- X Practical/Tutorial	Analog Systems & Applications Lab	2
	Skill Enhancement Course -2	SEC -2	2
	Generic Elective -4	GE-4	4
	Generic Elective -4 Practical	GE-4 Lab	2
	Core course-XI	Quantum Mechanics & Applications	4
	Core Course-XI Practical/Tutorial	Quantum Mechanics Lab	2
	Core course-XII	Solid State Physics	4
T 7	Core Course-XII Practical/Tutorial	Solid State Physics Lab	2
V	Discipline Specific Elective -1`	DSE-1	4
	Discipline Specific Elective -1Practical/Tutorial	DSE-1 Lab	2
	Discipline Specific Elective -2	DSE-2	4
	Discipline Specific Elective- 2Practical/Tutorial	DSE-2 Lab	2
VI	Core course-XIII	Electro-magnetic Theory	4
	Core Course-XIII Practical/Tutorial	Electro-magnetic Theory Lab	2
	Core course-XIV	Statistical Mechanics	4
	Core Course-XIV Practical/Tutorial	Statistical Mechanics Lab	2
	Discipline Specific Elective -3	DSE-3	4
	Discipline Specific Elective -3Practical/Tutorial	DSE-3 Lab	2
	Discipline Specific Elective -4	DSE-4	2
	Discipline Specific Elective -4Practical/Tutorial	DSE-4 Lab	<u> </u>
Total			140





CORE PAPERS

(Credit: 4+2 = 6 each, Lectures: Theory-60, Practical-60) (1 period/week for tutorials or 4periods/week for practical)

- C1. Mathematical Physics-I
- C2. Mechanics
- C3. Electricity and Magnetism
- C4. Waves and Optics
- C5. Mathematical Physics-II
- C6. Thermal Physics
- C7. Digital Systems and Applications
- C8. Mathematical Physics III
- C9. Elements of Modern Physics
- C10. Analog Systems and Applications
- C11. Quantum Mechanics and Applications
- C12. Solid State Physics
- C13. Electromagnetic Theory
- C14. Statistical Mechanics

DISCIPLINE SPECIFIC ELECTIVE PAPERS

(Credit: 06 each, Lectures: Theory-75, Tutorial-15) (DSE 1 to DSE 4)

Any four of the following subjects

- 1. Nuclear and Particle Physics (5) + Tutorials (1)
- 2. Classical Dynamics (5) + Tutorials (1)
- 3. Dissertation (6)
- 4. Experimental Techniques (4) + Lab(2)
- 5. Astronomy and Astrophysics (5) + Tutorials (1)
- 6. Earth Science (5) + Tutorials (1)
- 7. Medical Physics (4) + Lab (2)
- 8. Biophysics (5) + Tutorials (1)

Note: Dissertation should be a preferable choice as one of the DSE in Semester VI.



GENERIC ELECTIVE

From Other Discipline (Four papers GE 1 to GE 4, Credits: 6 each) *GE: Mathematics (Theory-5 + Tutorial-1)*

Or any one of the following subjects having four papers GE 1 to GE 4

- 1. Chemistry (4) + Lab(2)
- 2. Economics (5) + Tut (1)
- 3. Computer Science (4) + Lab (2)

ABILITY ENHANCEMENT ELECTIVE COURSE (AEEC) (SKILL ENHANCEMENT COURSE-(SEC))

(Credit: 02 each) - AEEC1 to AEEC 2

Any two of the followings

- 1. Electrical Circuit Network Skills
- 2. Basic Instrumentation Skills
- 3. Renewable Energy and Energy harvesting
- 4. Radiation Safety

ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)

(Two Papers, Credit: 02 each)

Semester I: English/MIL Communication[Hindi/Sanskrit/Urdu/Bengali/TRL] or Environmental Science

Semester II: *Environmental Science* or English/MIL Communication [Hindi/Sanskrit/Urdu/Bengali/TRL]

(Note: If English/MIL Communication [Hindi/Sanskrit/Urdu/Bengali/TRL] is taken in Semester I then Environmental Science in Semester II and vice-versa)



CORE COURSE (HONOURS IN PHYSICS)

SEMESTER I

PHYSICS-C I: MATHEMATICAL PHYSICS-I (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

The emphasis of course is on applications in solving problems of interest to physicists. The students are to be examined entirely on the basis of problems, seen and unseen.

Calculus:

Recapitulation: Intuitive ideas of continuous, differentiable, etc. functions and plotting of curves. Approximation: Taylor and binomial series (statements only). First Order Differential Equations and Integrating Factor. (6 Lectures)

Second Order Differential equations: Homogeneous Equations with constant coefficients. Wronskian and general solution. Statement of existence and Uniqueness Theorem for Initial Value Problems. Particular Integral for typical source terms like polynomials, exponential, sine, cosine etc and their combinations. (12 Lectures)

Calculus of multivariable functions: Partial derivatives, exact and inexact differentials. Integrating factor, with simple illustration. Constrained Maximization using Lagrange Multipliers. (6 Lectures)

Vector Calculus:

Recapitulation of vectors: Properties of vectors under rotations. Scalar product and its invariance under rotations. Vector product, Scalar triple product and their geometrical interpretation. Scalar and Vector fields. (5 Lectures)

Vector Differentiation: Directional derivatives and normal derivative. Gradient of a scalar field and its geometrical interpretation. Divergence and curl of a vector field. Del and Laplacian operators. Vector identities. (10 Lectures)

Vector Integration: Line, surface and volume integrals of Vector fields. Flux of a vector field. Gauss' divergence theorem, Green's and Stokes Theorems and their applications (no rigorous proofs). Dirac Delta function and its properties: (14 Lectures)

Orthogonal Curvilinear Coordinates:

Orthogonal Curvilinear Coordinates. Expression for Gradient, Divergence, Curl and Laplacian in orthogonal curvilinear co-ordinates. Derivation of Gradient, Divergence, Curl and Laplacian in Cartesian, Spherical and Cylindrical Coordinate Systems. (7 Lectures)

Reference Books:

- Mathematical Methods for Physicists, G.B. Arfken, H.J. Weber, F.E. Harris, 2013, 7th Edn., Flsevier
- An introduction to ordinary differential equations, E.A. Coddington, 2009, PHI learning
- Differential Equations, George F. Simmons, 2007, McGraw Hill.
- Mathematical Tools for Physics, James Nearing, 2010, Dover Publications.
- Mathematical methods for Scientists and Engineers, D.A. McQuarrie, 2003, Viva Book



- Advanced Engineering Mathematics, D.G. Zill and W.S. Wright, 5 Ed., 2012, Jones and Bartlett Learning
- Advanced Engineering Mathematics, Erwin Kreyszig, 2008, Wiley India.
- Essential Mathematical Methods, K.F.Riley & M.P.Hobson, 2011, Cambridge Univ. Press
- Mathematical Physics, B. D. Gupta.
- Mathematical Physics, B. S. Rajput.
- Mathematical Physics, H. K. Dass.
- Mathematical methods in Physics, E. Butkov.
- Mathematical methods in Physics, Potter and Goldberg.

PHYSICS-C II: MECHANICS (Credits: Theory-04, Practicals-02)

Theory: 60 Lectures

Fundamentals of Dynamics: Reference frames. Inertial frames; Review of Newton's Laws of Motion. Dynamics of a system of particles. Centre of Mass. Principle of conservation of momentum. Impulse. Momentum of variable-mass system: motion of rocket. (6 Lectures)

Rotational Dynamics: Angular momentum of a particle and system of particles. Torque. Principle of conservation of angular momentum. Moment of Inertia. Calculation of moment of inertia for rectangular, cylindrical and spherical bodies. Kinetic energy of rotation. Motion involving both translation and rotation. (12 Lectures)

Elasticity: Elastic constants and interrelation between them. Twisting torque on a Cylinder or Wire and twisting couple. (5 Lectures)

Flexure of beam: Bending of beam, Cantilever. (3 Lectures)

Surface Tension: Ripples and Gravity waves, Determination of Surface Tension by Jaeger's and Quinke's methods. Temperature dependance of Surface Tension. (6 Lectures)

Fluid Motion: Kinematics of Moving Fluids, velocity profile: Poiseuille's Equation for Flow of a Liquid through a Capillary Tube and the corrections. (2 Lectures)

Central Force Motion: Motion of a particle under a central force field. Two-body problem and its reduction to one-body problem and its solution.. Kepler's Laws. Satellite in circular orbit and applications. Geosynchronous orbits. Weightlessness. Basic idea of global positioning system (GPS). Physiological effects on astronauts. (6 Lectures)

Oscillations: Simple Harmonic Oscillations. Differential equation of SHM and its solution. Kinetic energy, potential energy, total energy and their time-average values. Damped oscillation. Forced oscillations: Transient and steady states; Resonance, sharpness of resonance; power dissipation and Quality Factor. (8 Lectures)

Special Theory of Relativity: Galilean transformations; Galilean invariance. Michelson-Morley Experiment and its outcome. Postulates of Special Theory of Relativity. Lorentz Transformations. Lorentz contraction, Time dilation. Relativistic transformation of velocity,



frequency and wave number. Relativistic addition of velocities. Variation of mass with velocity. Massless Particles. Mass-energy Equivalence. Relativistic Doppler effect. Relativistic Kinematics. Transformation of Energy and Momentum. Energy- Momentum Minkowski space and Four Vector. (12 Lectures)



Reference Books:

- Core Physics for Class 11, S B Mathur & A Kumar, Bharati Bhawan, Patna
- Mechanics, Berkeley Physics, vol.1, C.Kittel, W.Knight, et.al. 2007, Tata McGraw-Hill.
- Physics, Resnick, Halliday and Walker 8/e. 2008, Wiley.
- Analytical Mechanics, G.R. Fowles and G.L. Cassiday. 2005, Cengage Learning.
- Feynman Lectures, Vol. I, R.P.Feynman, R.B.Leighton, M.Sands, 2008, Pearson Education
- Introduction to Special Relativity, R. Resnick, 2005, John Wiley and Sons.
- University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.

Additional Books for Reference

- Mechanics, D.S. Mathur, S. Chand and Company Limited, 2000
- University Physics. F.W Sears, M.W Zemansky, H.D Young 13/e, 1986, Addison Wesley
- Physics for scientists and Engineers with Modern Phys., J.W. Jewett, R.A. Serway, 2010, Cengage Learning
- Theoretical Mechanics, M.R. Spiegel, 2006, Tata McGraw Hill.
- A textbook of General Physics, Edser
- Fluid mechanics, Kaufmann
- A treatise of hydromechanics, Basant and Ramsay.
- Oscillations and waves, Satya Prakash.
- A textbook of oscillation, waves and Acoustics, M. Ghosh and D. Bhattacharya

PHYSICS LAB- C I LAB 60 Lectures

The aim of this Lab is not just to teach computer programming and numerical analysis but to emphasize its role in solving problems in Physics.

- Highlights the use of computational methods to solve physical problems
- The course will consist of lectures (both theory and practical) in the Lab
- Evaluation done not on the programming but on the basis of formulating the problem
- Aim at teaching students to construct the computational problem to be solved
- Students can use any one operating system Linux or Microsoft Windows

Topics	Description with Applications
Introduction and Overview	Computer architecture and organization, memory and
	Input/output devices
Basics of scientific computing	Binary and decimal arithmetic, Floating point numbers,
	algorithms, Sequence, Selection and Repetition, single and
	double precision arithmetic, underflow &overflow emphasize
	the importance of making equations in terms of dimensionless
	variables, Iterative methods
Errors and error Analysis	Truncation and round off errors, Absolute and relative errors,
	Floating point computations.
Review of C & C++	Introduction to Programming, constants, variables and data
Programming fundamentals	types, operators and Expressions, I/O statements, scanf and
	printf, c in and c out, Manipulators for data formatting, Control
	statements (decision making and looping statements) (If-
	statement. If-else Statement. Nested if Structure. Else-if
	Statement. Ternary Operator. Goto Statement. Switch
	Statement. Unconditional and Conditional Looping. While
	Loop. Do-While Loop. FOR Loop. Break and Continue
	Statements. Nested Loops), Arrays (1D & 2D) and strings, user
ACTI	defined functions, Structures and Unions, Idea of classes and
ST. AUGUS MANOHARE	THE COLLEGE
Programs:	Sum & average of a list of numbers, largest of a given list of



Also attempt some problems on differential equations like:

1. Solve the coupled first order differential equations

$$dx/dt = y + x - x^3/3$$

$$dy/dt = -x$$

for four initial conditions x(0) = 0, y(0) = -1, -2, -3, -4. Plot x vs y for each of the four initial conditions on the same screen for $0 \le t \le 15$.

2. The ordinary differential equation describing the motion of a pendulum is

$$\theta'' = -\sin(\theta)$$

The pendulum is released from rest at an angular displacement α i.e. ϑ (0) = α , ϑ '(0) =0. Use the RK4 method to solve the equation for α = 0.1, 0.5 and 1.0 and plot ϑ as a function of time in the range $0 \le t \le 8\pi$. Also, plot the analytic solution valid in the small ϑ ($\sin \vartheta \approx \vartheta$).

2. Solve the differential equation:

$$x^{2} (d^{2}y/dx^{2})-4x(1+x)(dy/dx)+2(1+x)y=x^{3}$$

with the boundary conditions: at x = 1, $y = (1/2)e^2$, $dy/dx = -(3/2)e^2-0.5$, in the range $1 \le x \le 3$. Plot y and dy/dx against x in the given range. Both should appear on the same graph.

Referred Books:

- Introduction to Numerical Analysis, S.S. Sastry, 5th Edn., 2012, PHI Learning Pvt. Ltd.
- Schaum's Outline of Programming with C++. J. Hubbard, 2000, McGraw Hill Pub.
- Numerical Recipes in C: The Art of Scientific Computing, W.H. Pressetal, 3rd Edn., 2007, Cambridge University Press.
- A first course in Numerical Methods, U.M. Ascher & C. Greif, 2012, PHI Learning.
- Elementary Numerical Analysis, K.E. Atkinson, 3 r d Edn., 2007, Wiley India Edition.
- Numerical Methods for Scientists & Engineers, R.W. Hamming, 1973, Courier Dover Pub.
- An Introduction to computational Physics, T.Pang, 2nd Edn., 2006, Cambridge Univ. Press



PHYSICS LAB-C I LAB 60 Lectures

- 1. Measurements of length (or diameter) using vernier caliper, screw gauge and travelling microscope.
- 2. To study the random error in observations.
- 4. To study the Motion of Spring and calculate (a) Spring constant, (b) **g** and (c) Modulus of rigidity.
- 5. To determine the Moment of Inertia of a Flywheel.
- 6. To determine **g** and velocity for a freely falling body using Digital Timing Technique
- 7. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method).
- 9. To determine the Modulus of Rigidity of a bar by method of bending.
- 10. To determine the elastic Constants of a wire by Searle's method.
- 11. To determine the value of g using Bar Pendulum.
- 12. To determine the value of g using Kater's Pendulum.

Reference Books

- Advanced Practical Physics for students, B. L. Flint and H.T. Worsnop, 1971, Asia Publishing House
- Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
- A Text Book of Practical Physics, I.Prakash & Ramakrishna, 11th Edn, 2011, Kitab Mahal.



SEMESTER II

PHYSICS-C III: ELECTRICITY AND MAGNETISM (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

Electric Field and Electric Potential

Electric field: Electric field lines. Electric flux. Gauss' Law with applications to charge distributions with spherical, cylindrical and planar symmetry. (6 Lectures)

Conservative nature of Electrostatic Field. Electrostatic Potential. Laplace's and Poisson Equations and their solutions . The Uniqueness Theorem. Potential and Electric Field due to a dipole. Force and Torque on a dipole. (6 Lectures)

Electrostatic energy of system of charges. Conductors in an electrostatic Field. Surface charge and force on a conductor. Parallel-plate capacitor. Capacitance of an isolated conductor. (10 Lectures)

Dielectric Properties of Matter: Electric Field in matter. Polarization, Polarization Charges. Electrical Susceptibility and Dielectric Constant. Capacitor (parallel plate, spherical, cylindrical) filled with dielectric. Displacement vector **D**. Relations between **E**, **P** and **D**. Gauss' Law in dielectrics. (8 Lectures)

Magnetic Field: Magnetic force between current elements and definition of Magnetic Field **B**. Biot-Savart's Law and its simple applications: straight wire and circular loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole). Ampere's Circuital Law and its application to (1) Solenoid and (2) Toroid. Properties of **B**: curl and divergence. Vector Potential. Magnetic Force on (1) on point charge (2) on current carrying wire (3) between current elements. Torque on a current loop in a uniform Magnetic Field.

(11 Lectures)

Magnetic Properties of Matter: Magnetization vector (M). Magnetic Intensity (H). Magnetic Susceptibility and permeability. Relation between B, H, M. Ferromagnetism. B-H curve and hysteresis. (4 Lectures)

Electromagnetic Induction: Recapitulation of Faraday's Law, Lenz's Law, Self Inductance and Mutual Inductance. Superposition Theorem. Reciprocity Theorem. Energy stored in a Magnetic Field. Introduction to Maxwell's Equations. Charge Conservation and Displacement current. (6 Lectures)

Electrical Circuits: AC Circuits: Kirchhoff's laws for AC circuits. Complex Reactance and Impedance. Series LCR Circuit: (1) Resonance, (2) Power Dissipation and (3) Quality Factor, and (4) Band Width. Parallel LCR Circuit. (5 Lectures)

Ballistic Galvanometer: Torque on a current Loop. Ballistic Galvanometer: Current and Charge Sensitivity. Electromagnetic damping. Logarithmic damping. CDR. (4 Lectures)



Reference Books:

- Core Physics for Class 12, S B Mathur & A Kumar, Bharati Bhawan, Patna.
- Electricity, Magnetism & Electromagnetic Theory, S. Mahajan and Choudhury, 2012, Tata McGraw
- Electricity and Magnetism, Edward M. Purcell, 1986 McGraw-Hill Education
- Introduction to Electrodynamics, D.J. Griffiths, 3rd Edn., 1998, Benjamin Cummings.
- Feynman Lectures Vol.2, R.P.Feynman, R.B.Leighton, M. Sands, 2008, Pearson Education
- Elements of Electromagnetics, M.N.O. Sadiku, 2010, Oxford University Press.
- Electricity and Magnetism, J.H.Fewkes & J.Yarwood. Vol. I, 1991, Oxford Univ. Press.
- Electricity and Magnetism, Chattopadhyaya and Rakshit
- Electricity and Magnetism, Mahajan and Rangwala
- Electricity and Magnetism, K. K. Tewary.

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PHYSICS-C IV: WAVES AND OPTICS (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

Wave Motion: Plane and Spherical Waves. Longitudinal and Transverse Waves. Plane Progressive (Travelling) Waves. Wave Equation. Particle and Wave Velocities. Differential Equation. Pressure of a Longitudinal Wave. Energy Transport. Intensity of Wave. Water Waves: Ripple and Gravity Waves. (6 Lectures)

Velocity of Waves: Velocity of Transverse Vibrations of Stretched Strings. Velocity of Longitudinal Waves in a Fluid in a Pipe. Newton's Formula for Velocity of Sound. Laplace's Correction. (6 Lectures)

Wave Optics: Electromagnetic nature of light. Definition and properties of wave front. Huygens Principle. Temporal and Spatial Coherence. (5 Lectures)

Interference: Division of amplitude and wavefront. Young's double slit experiment. Lloyd's Mirror and Fresnel's Biprism. Phase change on reflection: Stokes' treatment. Interference in Thin Films: parallel and wedge-shaped films. Fringes of equal inclination (Haidinger Fringes); Fringes of equal thickness (Fizeau Fringes). Newton's Rings: Measurement of wavelength and refractive index. (12 Lectures)

Interferometer: Michelson Interferometer-(1) Idea of form of fringes (No theory required), (2) Determination of Wavelength, (3) Wavelength Difference, (4) Refractive Index, and (5) Visibility of Fringes. Fabry-Perot interferometer – theory and applications. **(6 Lectures)**

Diffraction: Kirchhoff's Integral Theorem, Fresnel-Kirchhoff's Integral formula and its application to rectangular slit. (6 Lectures)

Fraunhofer diffraction: Single slit, Circular aperture, Resolving Power of a telescope. Single slit. Double slit. Multiple slits. Diffraction grating. Resolving power of grating.



(10 Lectures)

Fresnel Diffraction: Fresnel's Assumptions. Fresnel's Half-Period Zones for Plane Wave. Explanation of Rectilinear Propagation of Light. Theory of a Zone Plate: Multiple Foci of a Zone Plate. Fresnel's Integral, Fresnel diffraction pattern of a straight edge, a slit and a wire.

(9 Lectures)

Reference Books

- Core Physics for Class 11, S B Mathur & A Kumar, Bharati Bhawan, Patna.
- Core Physics for Class 12, Mathur & Kumar, Bharati Bhawan, Patna.
- Waves and Acoustics, P. K. Chakraborty and Satyabrata Chowdhury.
- Introduction to Geometrical and Physical Optics, B. K. Mathur.
- Geometrical and Physical Optics, P. K. Chakraborty.
- Waves: Berkeley Physics Course, vol. 3, Francis Crawford, 2007, Tata McGraw-Hill.
- Fundamentals of Optics, F.A. Jenkins and H.E. White, 1981, McGraw-Hill
- Principles of Optics, Max Born and Emil Wolf, 7th Edn., 1999, Pergamon Press.



- Optics, Ajoy Ghatak, 2008, Tata McGraw Hill
- The Physics of Waves and Oscillations, N.K. Bajaj, 1998, Tata McGraw Hill.

Manual of Physics for PHYSICS LAB-C II LAB 60 Lectures

- 1. Use a Multimeter for measuring (a) Resistances, (b) AC and DC Voltages, (c) DC Current, (d) Capacitances, and (e) Checking electrical fuses.
- 2. To study the characteristics of a series RC Circuit.
- 3. To determine an unknown Low Resistance using Potentiometer.
- 4. To compare capacitances using De'Sauty's bridge.
- 5. Measurement of field strength B and its variation in a solenoid (determine dB/dx)
- 6. To verify the Thevenin and Norton theorems.
- 7. To verify the Superposition, and Maximum power transfer theorems.
- 9. To determine self inductance of a coil by Anderson's bridge.
- 9. To study response curve of a Series LCR circuit and determine its (a) Resonant frequency,
- (b) Impedance at resonance, (c) Quality factor Q, and (d) Band width.
- 10. To study the response curve of a parallel LCR circuit and determine its (a) Anti resonant frequency and (b) Quality factor Q.
- 11. Measurement of charge and current sensitivity and CDR of Ballistic Galvanometer
- 12. Determine a high resistance by leakage method using Ballistic Galvanometer.

Reference Books

- Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, 1971, Asia Publishing House
- A Text Book of Practical Physics, I.Prakash & Ramakrishna, 11th Ed., 2011, Kitab Mahal
- Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
- A Laboratory undergraduate classes, D.P.Khandelwal, 1985, Vani Pub.



PHYSICS LAB- C II LAB 60 Lectures

- 1. Familiarization with: Schuster's focusing; determination of angle of prism.
- 2. To determine refractive index of the Material of a prism using sodium source.
- 3. To determine the dispersive power and Cauchy constants of the material of a prism using mercury source.
- 4. To determine wavelength of sodium light using Fresnel Biprism.
- 5. To determine wavelength of sodium light using Newton's Rings.
- 6. To determine the thickness of a thin paper by measuring the width of the interference fringes produced by a wedge-shaped Film.
- 7. To determine wavelength of (1) Na source and (2) spectral lines of Hg source using plane diffraction grating.
- 8. To determine dispersive power and resolving power of a plane diffraction grating.

Reference Books

- Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, 1971, Asia Publishing House
- A Text Book of Practical Physics, I. Prakash & Ramakrishna, 11th Ed., 2011, Kitab Mahal
- Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
- A Laboratory Manual of Physics for undergraduate classes, D.P.Khandelwal, 1985, Vani Pub.



SEMESTER III

PHYSICS-C V: MATHEMATICAL PHYSICS-II (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

The emphasis of the course is on applications in solving problems of interest to Physicists. Students are to be examined on the basis of problems, seen and unseen.

Fourier Series: Periodic functions. Orthogonality of sine and cosine functions, Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients. Complex representation of Fourier series. Expansion of functions with arbitrary period. Expansion of non-periodic functions over an interval. Even and odd functions and their Fourier expansions. Application. Analysis of saw-tooth and square wave. Summing of Infinite Series. Term-by-Term differentiation and integration of Fourier Series. (14 Lectures)

Frobenius Method and Special Functions: Singular Points of Second Order Linear Differential Equations and their importance. Frobenius method and its applications to differential equations. Legendre, Bessel, Hermite and Laguerre Differential Equations. Properties of Legendre Polynomials: Rodrigues Formula, Generating Function, Orthogonality. Simple recurrence relations. Expansion of function in a series of Legendre Polynomials. Bessel Functions of the First Kind: Generating Function, simple recurrence relations. Zeros of Bessel Functions and Orthogonality. (24 Lectures)

Some Special Integrals: Beta and Gamma Functions and Relation between them. Expression of Integrals in terms of Gamma Functions. Error Function (Probability Integral). (4 Lectures)

Theory of Errors: Systematic and Random Errors. Propagation of Errors. Normal Law of Errors. Standard and Probable Error. (4 Lectures)

Partial Differential Equations: Solutions to partial differential equations, using separation of variables: Laplace's Equation in problems of rectangular, cylindrical and spherical symmetry. Wave equation and its solution for vibrational modes of a stretched string.

(14 Lectures)

Reference Books:

- Mathematical Methods for Physicists: Arfken, Weber, 2005, Harris, Elsevier.
- Fourier Analysis by M.R. Spiegel, 2004, Tata McGraw-Hill.
- Mathematics for Physicists, Susan M. Lea, 2004, Thomson Brooks/Cole.
- Differential Equations, George F. Simmons, 2006, Tata McGraw-Hill.
- Partial Differential Equations for Scientists & Engineers, S.J. Farlow, 1993, Dover Pub.
- Mathematical methods for Scientists & Engineers, D.A. McQuarrie, 2003, Viva Books
- Mathematical Physics, B. D. Gupta.
- Mathematical Physics, B. S. Rajput.
- Mathematical Physics, H. K. Dass.
- Mathematical methods in Physics, E. Butkov.
- Mathematical methods in Physics, Potter and Goldberg.



PHYSICS-C VI: THERMAL PHYSICS (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

(Include related problems for each topic)

INTRODUCTION TO THERMODYNAMICS

Zeroth and First Law of Thermodynamics:

Thermodynamic Equilibrium, Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat, First Law of Thermodynamics and its differential form, Internal Energy, First Law & various processes, Applications of First Law: General Relation between C_P and C_V, Work Done during Isothermal and Adiabatic Processes. (8 Lectures)

Second Law of Thermodynamics: Reversible and Irreversible process with examples. Heat Engines. Carnot's Cycle, Carnot engine & efficiency. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Carnot's Theorem. Applications of Second Law of Thermodynamics: Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale.

(10 Lectures)

Entropy: Concept of Entropy, Clausius Theorem. Clausius Inequality, Second Law of Thermodynamics in terms of Entropy. Entropy of a perfect gas. Principle of Increase of Entropy. Entropy Changes in Reversible and Irreversible processes with examples. Principle of Increase of Entropy. Temperature–Entropy diagrams for Carnot's Cycle. Third Law of Thermodynamics (Nearst's Heat Theorem). Unattainability of Absolute Zero. **(7 Lectures)**

Thermodynamic Potentials: Thermodynamic Potentials: Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy. Their Definitions, Properties and Applications. Surface Films. Cooling due to adiabatic demagnetization, First and second order Phase Transitions with examples. (7 Lectures)

Maxwell's Thermodynamic Relations: Derivations and applications of Maxwell's Relations, (1) Clausius Clapeyron equation, (2) Value of C_p-C_v, (3) TdS Equations, (4) Joule-Kelvin coefficient for Ideal and Van der Waal Gases. (7 Lectures)

KINETIC THEORY OF GASES

Distribution of Velocities: Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas. Stern's Experiment. Mean, RMS and Most Probable Speeds. Degrees of Freedom. Law of Equipartition of Energy (No proof required). Specific heats of Gases. (7 Lectures)

Molecular Collisions: Mean Free Path. Collision Probability. Estimates of Mean Free Path. Transport Phenomenon in Ideal Gases: (1) Viscosity, (2) Thermal Conductivity and (3) Diffusion. (4 Lectures)

Real Gases: Behavior of Real Gases: Deviations from the Ideal Gas Equation. The Virial Equation. Critical Constants. Boyle Temperature. Van der Waal's Equation of State for Real Gases. Values of Critical Constants. Law of Corresponding States. Comparison with



Experimental Curves. P-V Diagrams. Joule's Experiment. Free Adiabatic Expansion of a Perfect Gas. Joule-Thomson Porous Plug Experiment. Joule- Thomson Effect for Real and Van der Waal Gases. Temperature of Inversion. Joule- Thomson Cooling. (10 Lectures)

Reference Books:

- Core Physics for Class 11, S B Mathur & A Kumar, Bharati Bhawan, Patna.
- A Treatise on Heat, Meghnad Saha, and B.N.Srivastava, 1958, Indian Press
- Thermal Physics, S. Garg, R. Bansal and Ghosh, 2nd Edition, 1993, Tata McGraw-Hill
- Modern Thermodynamics with Statistical Mechanics, Carl S. Helrich, 2009, Springer.
- Thermodynamics, Kinetic Theory & Statistical Thermodynamics, Sears & Salinger. 1988, Narosa.
- Concepts in Thermal Physics, S.J. Blundell and K.M. Blundell, 2nd Ed., 2012, Oxford University Press

Heat and Thermodynamics, A. B. Gupta and H. P. Roy. Heat and Thermodynamics, P. K. Chakraborty.

PHYSICS-C VII: DIGITAL SYSTEMS AND APPLICATIONS (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

Theory. 00 Lectures

Digital Circuits: Difference between Analog and Digital Circuits. Binary Numbers. Decimal to Binary and Binary to Decimal Conversion. BCD, Octal and Hexadecimal numbers. AND, OR and NOT Gates. NAND and NOR Gates as Universal Gates. XOR and XNOR Gates.

(10 Lectures)

Boolean algebra: De Morgan's Theorems. Boolean Laws. Simplification of Logic Circuit using Boolean Algebra. Fundamental Products. Idea of Minterms and Maxterms. Conversion of a Truth table into Equivalent Logic Circuit by (1) Sum of Products Method and (2) Karnaugh Map. (10 Lectures)

Data processing circuits: Basic idea of Multiplexers, De-multiplexers, Decoders, Encoders.

(6 Lectures)

Arithmetic Circuits: Binary Addition. Binary Subtraction using 2's Complement. Half and Full Adders, 4-bit binary Adder. (6 Lectures)

Sequential Circuits: SR, D, and JK Flip-Flops. Clocked (Level and Edge Triggered) Flip- Flops. Preset and Clear operations. Race-around conditions in JK Flip-Flop. M/S JK Flip- Flop. (10 Lectures)

Timers: IC 555: block diagram and applications: Astable multivibrator and Monostable multivibrator. (6 Lectures)

Shift registers: Serial-in-Serial-out, Serial-in-Parallel-out, Parallel-in-Serial-out and Parallel- in-Parallel-out Shift Registers (only up to 4 bits). **(6 Lectures)**

Counters (4 bits): Ring Counter. Asynchronous counters, Decade Counter. Synchronous Counter. (6 Lectures)

Reference Books:

- Basic Electronics, Arun Kumar, Bharati Bhawan, Patna.
- Digital Principles and Applications, A.P. Malvino, D.P.Leach and Saha, 7th Ed., 2011, Tata





McGraw

- Fundamentals of Digital Circuits, Anand Kumar, 2nd Edn, 2009, PHI Learning Pvt. Ltd.
- Digital Circuits and systems, Venugopal, 2011, Tata McGraw Hill.
- ------Digital-Systems: Principles & Applications, R.J. Tocci, N.S. Widmer, 2001, PHI Learning-
 - Logic Circuit Design, Shimon P. Vingron, 2012, Springer.
- Microprocessor Architecture Programming & applications with 8085, 2002, R.S.Goankar, Prentice Hall.
- Digital Electronics, Floyd.
- Digital Computer Electronics, Malvino
- Digital Logic and Computer Design, M. Morris Mano.

PHYSICS LAB-C III LAB 60 Lectures

The gim of this Lab is to use the computational methods to solve physical problems. Course

The aim of this Lab is to use the computational methods to solve physical problems. Course will consist of lectures (both theory and practical) in the Lab. Evaluation done not on the

programming but on the basis of formulating the problem

Topics	Description with Applications
Introduction to Numerical computation software Scilab	Introduction to Scilab, Advantages and disadvantages, Scilab environment, Command window, Figure window, Edit window, Variables and arrays, Initialising variables in Scilab, Multidimensional arrays, Subarray, Special values, Displaying output data, data file, Scalar and array operations, Hierarchy of operations, Built in Scilab functions, Introduction to plotting, 2D and 3D plotting, Branching Statements and program design, Relational & logical operators, the while loop, for loop, details of loop operations, break & continue statements, nested loops, logical arrays and vectorization. User defined functions, Introduction to Scilab functions, variable passing in Scilab, optional arguments, preserving data between calls to a function, Complex and Character data, string function, Multidimensional arrays an introduction to Scilab file processing, file opening and closing, Binary I/o functions, comparing binary and formatted functions, Numerical methods and developing the skills of writing a
	program.
Curve fitting, Least square fit, Goodness of fit, standard deviation	Ohms law to calculate R, Hooke's law to calculate spring constant
Solution of Linear system of equations by Gauss elimination method and Gauss Seidal method. Diagonalization of matrices, Inverse of a matrix, Eigen vectors, eigen values problems	Solution of mesh equations of electric circuits (3 meshes) Solution of coupled spring mass systems (3 masses)



Solution of ODE First	First order differential equation, Radioactive decay, Current in RC,
order Differential equation	LC circuits with DC source, Newton's law of cooling, Classical
Euler, modified Euler and	equations of motion, Second order Differential Equation,
Runge-Kutta second order	Harmonic oscillator (no friction), Damped Harmonic oscillator,
methods Second order	Over damped, Critical damped, Oscillatory, Forced Harmonic
differential equation	oscillator, Transient and, Steady state solution
Fixed difference method	Apply above to LCR circuits also.



Reference Books:

- Mathematical Methods for Physics and Engineers, K.F Riley, M.P. Hobson and S. J.Bence, 3rd ed., 2006, Cambridge University Press
- Complex Variables, A.S. Fokas & M.J. Ablowitz, 8th Ed., 2011, Cambridge Univ. Press
- First course in complex analysis with applications, D.G. Zill and P.D. Shanahan, 1940, Jones & Bartlett
- Simulation of ODE/PDE Models with MATLAB®, OCTAVE and SCILAB: Scientific and Engineering Applications: A.V. Wouwer, P. Saucez, C.V. Fernández. 2014 Springer
- Scilab by example: M. Affouf 2012, ISBN: 978-1479203444
- Scilab (A free software to Matlab): H.Ramchandran, A.S.Nair. 2011 S.Chand & Company
- Scilab Image Processing: Lambert M. Surhone. 2010 Betascript Publishing



PHYSICS LAB- C III LAB

60 Lectures

1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.

- 2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.
- 3. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee's disc method.
- 4. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).
- 5. To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.
- 6. To calibrate a thermocouple to measure temperature in a specified Range using (1) Null Method and to determine Neutral Temperature.

Reference Books

- Advanced Practical Physics for students, B. L. Flint and H.T. Worsnop, 1971, Asia Publishing House
- A Text Book of Practical Physics, I.Prakash & Ramakrishna, 11th Ed., 2011, Kitab Mahal
- Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
- A Laboratory Manual of Physics for undergraduate classes, D.P.Khandelwal, 1985, Vani Pub.





PHYSICS PRACTICAL-C III LAB 60 Lectures

- 1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO.
- 2. To test a Diode and Transistor using a Multimeter.
- 3. To design a switch (NOT gate) using a transistor.
- 4. To verify and design AND, OR, NOT and XOR gates using NAND gates.
- 5. To design a combinational logic system for a specified Truth Table.
- 6. To convert a Boolean expression into logic circuit and design it using logic gate ICs.
- 7. To minimize a given logic circuit.
- 8. Half Adder, Full Adder and 4-bit binary Adder.
- 9. Half Adder and Full Adder Truth table verification using I.C.
- 10. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates.
- 11. To design an astable multivibrator of given specifications using 555 Timer.
- 12. To design a monostable multivibrator of given specifications using 555 Timer.

Reference Books:

- Modern Digital Electronics, R.P. Jain, 4th Edition, 2010, Tata McGraw Hill.
- Basic Electronics: A text lab manual, P.B. Zbar, A.P. Malvino, M.A. Miller, 1994, Mc-Graw Hill.
- Microprocessor Architecture Programming and applications with 8085, R.S.Goankar, 2002, Prentice Hall.
- Microprocessor 8085: Architecture, Programming and interfacing, A. Wadhwa, 2010, PHI Learning.



SEMESTER IV

PHYSICS-VIII: MATHEMATICAL PHYSICS-III (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

The emphasis of the course is on applications in solving problems of interest to physicists.

Students are to be examined on the basis of problems, seen and unseen.

Complex Analysis: Brief Revision of Complex Numbers and their Graphical Representation. Euler's formula, De Moivre's theorem, Roots of Complex Numbers. Functions of Complex Variables. Analyticity and Cauchy-Riemann Conditions. Examples of analytic functions. Singular functions: poles, order of singularity, Integration of a function of a complex variable. Cauchy's Inequality. Cauchy's Integral formula. Simply and multiply connected region. Laurent and Taylor's expansion. Residues and Residue Theorem. Application in solving Definite Integrals. (30 Lectures)

Integrals Transforms:

Fourier Transforms: Fourier Integral theorem. Fourier Transform. Examples. Fourier transform of trigonometric, Gaussian, finite wave train & other functions. Representation of Dirac delta function as a Fourier Integral. Fourier transform of derivatives, Inverse Fourier transform, Properties of Fourier transforms (translation, change of scale, complex conjugation, etc.). Three dimensional Fourier transforms with examples. Application of Fourier Transforms to differential equations: One dimensional Wave and Diffusion/Heat Flow Equations. (15 Lectures)

Laplace Transforms: Laplace Transform (LT) of Elementary functions. Properties of LTs: Change of Scale Theorem, Shifting Theorem. LTs of Derivatives and Integrals of Functions, Derivatives and Integrals of LTs. LT of Unit Step function, Convolution Theorem. Inverse LT. Application of Laplace Transforms to Differential Equations: Damped Harmonic Oscillator, Simple Electrical Circuits. (15 Lectures)

Reference Books:

- Mathematical Methods for Physics and Engineers, K.F Riley, M.P. Hobson and S. J. Bence, 3rd ed., 2006, Cambridge University Press
- Mathematics for Physicists, P. Dennery and A.Krzywicki, 1967, Dover Publications
- Complex Variables, A.S.Fokas & M.J.Ablowitz, 8th Ed., 2011, Cambridge Univ. Press
- Complex Variables and Applications, J.W. Brown & R.V. Churchill, 7th Ed. 2003, Tata McGraw-Hill
- First course in complex analysis with applications, D.G. Zill and P.D. Shanahan, 1940, Jones & Bartlett.
- Mathematical Physics, B. D. Gupta.
- Mathematical Physics, B. S. Rajput.
- Mathematical Physics, H. K. Dass.
- Mathematical methods in Physics, E. Butkov.
- Mathematical methods in Physics, Potter and Goldberg.

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PHYSICS-C IX: ELEMENTS OF MODERN PHYSICS (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

Quantum theory of Light: Wave-particle duality, Photo-electric effect and Compton scattering. De Broglie wavelength and matter waves; Davisson-Germer experiment. Wave description of particles by wave packets. Group and Phase velocities and relation between them. Two-Slit experiment with electrons. Probability. Wave amplitude and wave functions.

(15 Lectures)

Quantum Uncertainty: Heisenberg uncertainty principle (Uncertainty relations involving Canonical pair of variables): Derivation from Wave Packets impossibility of a particle following a trajectory; Estimating minimum energy of a confined particle using uncertainty principle; Energy-time uncertainty principle. **(6 Lectures)**

Matter waves and wave amplitude; Schrodinger equation for non-relativistic particles; Physical quantities as operators, Position, Momentum and Energy operators; stationary states; physical interpretation of a wave function, probabilities and normalization; Probability and probability current densities in one dimension. (10 Lectures)

One dimensional infinitely rigid box- energy eigenvalues and eigenfunctions, normalization; Quantum mechanical scattering and tunnelling in one dimension-across a step potential & rectangular potential barrier. (10 Lectures)

Radioactivity: stability of the nucleus; Law of radioactive decay; Mean life and half-life; Alpha decay; Beta decay- energy released, spectrum and Pauli's prediction of neutrino; Gamma ray emission, energy-momentum conservation: electron-positron pair creation by gamma photons in the vicinity of a nucleus. (10 Lectures)

Fission and fusion- mass deficit, Fission - nature of fragments and emission of neutrons. Nuclear reactor: slow neutrons interacting with Uranium 235; Fusion and thermonuclear reactions driving stellar energy (brief qualitative discussions). (3 Lectures)

Lasers: Einstein's A and B coefficients. Metastable states. Spontaneous and Stimulated emissions. Optical Pumping and Population Inversion. Three-Level and Four-Level Lasers. Ruby Laser and He-Ne Laser. (6 Lectures)

Reference Books:

- Introduction to Quantum mechanics, Nikhil Ranjan Roy, 2016, Vikash Publishing House Pvt. Ltd.
- •Introduction to Solid State Physics, Arun Kumar, PHI Learning Pvt. Ltd., New Delhi.
- Concepts of Modern Physics, Arthur Beiser, 2002, McGraw-Hill.
- Introduction to Quantum Mechanics, David J. Griffith, 2005, Pearson Education.
- Physics for scientists and Engineers with Modern Physics, Jewett and Serway, 2010, Cengage Learning.
- Quantum Mechanics: Theory & Applications, A.K.Ghatak & S.Lokanathan, 2004, Macmillan



Additional Books for Reference

- Modern Physics, J.R. Taylor, C.D. Zafiratos, M.A. Dubson, 2004, PHI Learning.
- Theory and Problems of Modern Physics, Schaum's outline, R. Gautreau and W. Savin, 2nd Edn, Tata McGraw-Hill Publishing Co. Ltd.
- Quantum Physics, Berkeley Physics, Vol.4. E.H.Wichman, 1971, Tata McGraw-Hill Co.
- Basic ideas and concepts in Nuclear Physics, K.Heyde, 3rd Edn., Institute of Physics Pub.
- Six Ideas that Shaped Physics: Particle Behave like Waves, T.A.Moore, 2003, McGraw Hill



PHYSICS-C X: ANALOG SYSTEMS AND APPLICATIONS (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

Semiconductor Diodes: P and N type semiconductors. Energy Level Diagram. Conductivity and Mobility, Barrier Formation in PN Junction Diode. Static and Dynamic Resistance. Current Flow Mechanism in Forward and Reverse Biased Diode. Drift Velocity. Derivation for Barrier Potential, Barrier Width and Current for Step Junction. (10 Lectures)

Two-terminal Devices and their Applications: (1) Rectifier Diode: Half-wave Rectifiers. Centre-tapped and Bridge Full-wave Rectifiers, Calculation of Ripple Factor and Rectification Efficiency, (2) Zener Diode and Voltage Regulation. Principle and structure of (1) LEDs, (2) Photodiode, (3) Solar Cell. (6 Lectures)

Bipolar Junction transistors: n-p-n and p-n-p Transistors. Characteristics of CB, CE and CC Configurations. Current gains α and β Relations between α and β . Load Line analysis of Transistors. DC Load line and Q-point. Physical Mechanism of Current Flow. Active, Cut off and Saturation Regions. (6 Lectures)

Amplifiers: Transistor Biasing and Stabilization Circuits. Fixed Bias and Voltage Divider Bias. Transistor as 2-port Network. h-parameter Equivalent Circuit. Analysis of a single-stage CE amplifier using Hybrid Model. Input and Output Impedance. Current, Voltage and Power Gains. Classification of Class A, B & C Amplifiers. (10 Lectures)

Coupled Amplifier: RC-coupled amplifier and its frequency response. (4 Lectures)

Feedback in Amplifiers: Effects of Positive and Negative Feedback on Input Impedance, Output Impedance, Gain, Stability, Distortion and Noise. (5 Lectures)

Sinusoidal Oscillators: Barkhausen's Criterion for self-sustained oscillations. RC Phase shift oscillator, determination of Frequency. Hartley & Colpitts oscillators. (6 Lectures)

Operational Amplifiers (Black Box approach): Characteristics of an Ideal and Practical Op-Amp. (IC 741) Open-loop and Closed-loop Gain. Frequency Response. CMRR. Slew Rate and concept of Virtual ground. (4 Lectures)

Applications of Op-Amps: (1) Inverting and non-inverting amplifiers, (2) Adder, (3) Subtractor, (4) Differentiator, (5) Integrator, (6) Log amplifier (9 Lectures)

Reference Books:

- Basic Electronics, Arun Kumar, Bharati Bhawan, Patna
- Integrated Electronics, J. Millman and C.C. Halkias, 1991, Tata Mc-Graw Hill.
- Electronics: Fundamentals and Applications, J.D. Ryder, 2004, Prentice Hall.



- Solid State Electronic Devices, B.G.Streetman & S.K.Banerjee, 6th Edn.,2009, PHI Learning Electronic Devices & circuits, S.Salivahanan & N.S.Kumar, 3rd Ed., 2012, Tata Mc-Graw Hill
- OP-Amps and Linear Integrated Circuit, R. A. Gayakwad, 4th edition, 2000, Prentice Hall
- Electronic circuits: Handbook of design & applications, U.Tietze, C.Schenk, 2008, Springer
- Semiconductor Devices: Physics and Technology, S.M. Sze, 2nd Ed., 2002, Wiley India
- Electronic Devices, 7/e Thomas L. Floyd, 2008, Pearson India
- A first course in Electronics, Khan and Dey, PHI
- Microelectronics, Millman and Grabel

PHYSICS PRACTICAL-C IV LAB 60 Lectures

Scilab based simulations experiments based on Mathematical Physics problems like

1. Solve differential equations:

$$dy/dx = e^{-x}$$
 with $y=0$ for $x=0$.

$$dy/dx + e^{-x}y = x^2$$

$$d^2y/dt^2 + 2dy/dt = -y$$

$$d^2y/dt^2 + e^{-t} dy/dt = -y$$

2

2. Fourier Series:

Program to sum $\sum_{n=1}^{\infty} (0.2)^n$

Evaluate the Fourier coefficients of a given periodic function (square wave).

3. Frobenius method and Special functions:

$$\int_{-1}^{+1} P_n(\mu) P_m(\mu) d\mu = \delta_{n,m}$$

Plot
$$P_n(x)$$
, $j_v(x)$

Show recursion relation.

- 4. Calculation of error for each data point of observations recorded in experiments done in previous semesters (choose any two).
- 5. Calculation of least square fitting manually without giving weightage to error. Confirmation of least square fitting of data through computer program.
- 6. Evaluation of trigonometric functions e.g. $\sin \theta$, Given Bessel's function at N points find its value at an intermediate point. Complex analysis: Integrate $1/(x^2+2)$ numerically and check with computer integration.



7. Integral transform: FFT of e^{-x^2} . **Reference Books:**



- Mathematical Methods for Physics and Engineers, K.F Riley, M.P. Hobson and S. J. Bence, 3rd ed., 2006, Cambridge University Press
- Mathematics for Physicists, P. Dennery and A. Krzywicki, 1967, Dover Publications
- Simulation of ODE/PDE Models with MATLAB®, OCTAVE and SCILAB: Scientific and Engineering Applications: A. Vande Wouwer, P. Saucez, C. V. Fernández. 2014 Springer ISBN: 978-3319067896
- Scilab by example: M. Affouf, 2012. ISBN: 978-1479203444
- Scilab (A free software to Matlab): H.Ramchandran, A.S.Nair. 2011 S.Chand & Company
 - Scilab Image Processing: Lambert M. Surhone. 2010 Betascript Publishing

PHYSICS PRACTICAL-C IV LAB 60 Lectures

- 1. Measurement of Planck's constant using black body radiation and photo-detector
- 2. Photo-electric effect: photo current versus intensity and wavelength of light; maximum energy of photo-electrons versus frequency of light.
- 3. To determine work function of material of filament of directly heated vacuum diode.
- 4. To determine the Planck's constant using LEDs of at least 4 different colours.
- 5. To determine the value of e/m by using a Bar magnet.
- 6. To show the tunneling effect in tunnel diode using I-V characteristics.
- 7. To determine the wavelength of laser source using diffraction of single slit.
- 8. To determine the wavelength of laser source using diffraction of double slits.
- 9. To determine (1) wavelength and (2) angular spread of He-Ne laser using plane diffraction grating

Reference Books

- Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, 1971, Asia Publishing House
- Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
- A Text Book of Practical Physics, I.Prakash & Ramakrishna, 11th Edn, 2011, Kitab Mahal

PHYSICS PRACTICAL-C IV LAB 60 Lectures

- 1. To study V-I characteristics of PN junction diode, and Light emitting diode.
- 2. To study the V-I characteristics of a Zener diode and its use as voltage regulator.
- 3. Study of V-I & power curves of solar cells, and find maximum power point & efficiency.
- 4. To study the characteristics of a Bipolar Junction Transistor in CE configuration.
- 5. To design a CE transistor amplifier of a given gain (mid-gain) using voltage divider bias.
- 6. To study the frequency response of voltage gain of a RC-coupled transistor amplifier.
- 7. To design a phase shift oscillator of given specifications using BJT.
- 8. To study the Colpitt's oscillator.
- 9. To study the analog to digital convertor (ADC) IC.
- 10. To design an inverting amplifier using Op-amp (741,351) for dc voltage of given gain
- 11. To design inverting amplifier using Op-amp (741,351) and study its frequency response
- 12. To design non-inverting amplifier using Op-amp (741,351) & study its frequency response
- 13. To add two dc voltages using Op-amp in inverting and non-inverting mode
- 14. To investigate the use of an op-amp as an Integrator.
- 15. To investigate the use of an op-amp as a Differentiator.



Reference Books:

- Basic Electronics: A text lab manual, P.B. Zbar, A.P. Malvino, M.A. Miller, 1994, Mc-Graw Hill.
- OP-Amps and Linear Integrated Circuit, R. A. Gayakwad, 4th edition, 2000, Prentice Hall.
- Electronic Principle, Albert Malvino, 2008, Tata Mc-Graw Hill.
- Electronic Devices & circuit Theory, R.L. Boylestad & L.D. Nashelsky, 2009, Pearson



SEMESTER V

PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS (Credits: Theory-04, Practicals-02)
Theory: 60 Lectures

Time dependent Schrodinger equation: Postulates of Quantum Mechanics, Time dependent Schrodinger equation and dynamical evolution of a quantum state; Properties of Wave Function. Interpretation of Wave Function Probability and probability current densities in three dimensions; Conditions for Physical Acceptability of Wave Functions. Normalization. Linearity and Superposition Principles. Eigenvalues and Eigenfunctions. Commutator of position and momentum operators; Expectation values of position and momentum. Wave Function of a Free Particle. (8 Lectures)

Time independent Schrodinger equation-Hamiltonian, stationary states and energy eigen values; General solution of the time dependent Schrodinger equation in terms of linear combinations of stationary states; Application to spread of Gaussian wave-packet for a free particle in one dimension; wave packets, Position-momentum uncertainty principle.

(12 Lectures)

General discussion of bound states in an arbitrary potential- continuity of wave function, boundary condition and emergence of discrete energy levels; application to one-dimensional problem-square well potential; Quantum mechanics of simple harmonic oscillator-energy levels and energy eigen functions using Frobenius method; Hermite polynomials; ground state, zero point energy & uncertainty principle. (14 Lectures)

Atoms in Electric & Magnetic Fields: Electron angular momentum. Space quantization. Electron Spin and Spin Angular Momentum. Larmor's Theorem. Spin Moment. Stern-Gerlach Experiment. Electron Magnetic Moment and Magnetic Energy, Gyromagnetic Ratio and Bohr Magneton. Normal and Anomalous Zeeman Effect. Paschen Back and Stark Effect (Qualitative Discussion only). (14 Lectures)

Hydrogen and Many electron atoms: Pauli's Exclusion Principle, Symmetric & Antisymmetric Wave Functions (Qualitative idea only). Spin orbit coupling. Spectral Notations for Atomic States. Total angular momentum. Vector Model. Spin-orbit coupling in atoms- L-S and J-J couplings. Hund's Rule. Term symbols. Spectra of Hydrogen and Alkali Atoms (Na etc.). (12 Lectures)

Reference Books:

- Introduction to Quantum mechanics, Nikhil Ranjan Roy, 2016, Vikash Publishing House Pvt. Ltd.
- A Text book of Quantum Mechanics, P.M.Mathews and K.Venkatesan, 2nd Ed., 2010, McGraw Hill
- Quantum Mechanics, Robert Eisberg and Robert Resnick, 2nd Edn., 2002, Wiley.
- Quantum Mechanics of Principal Le Schiff, 3rd Edn. 2010, Tata McGraw Hill.



- Quantum Mechanics, G. Aruldhas, 2nd Edn. 2002, PHI Learning of India.
- Quantum Mechanics, Bruce Cameron Reed, 2008, Jones and Bartlett Learning.
- Quantum Mechanics: Foundations & Applications, Arno Bohm, 3rd Edn., 1993, Springer
- Quantum Mechanics for Scientists & Engineers, D.A.B. Miller, 2008, Cambridge University Press
- Quantum mechanics, Satya Prakash

Additional Books for Reference

- Quantum Mechanics, Eugen Merzbacher, 2004, John Wiley and Sons, Inc.
- Introduction to Quantum Mechanics, D.J. Griffith, 2nd Ed. 2005, Pearson Education
- Quantum Mechanics, Walter Greiner, 4th Edn., 2001, Springer

PHYSICS-C XII: SOLID STATE PHYSICS (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

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Crystal Structure: Solids: Amorphous and Crystalline Materials. Lattice Translation Vectors. Unit Cell. Miller Indices. Reciprocal Lattice. Types of Lattices. Brillouin Zones. Diffraction of X-rays by Crystals. Bragg's Law. Atomic and Geometrical Factor.

(12 Lectures)

Elementary Lattice Dynamics: Lattice Vibrations and Phonons: Linear Monoatomic and Diatomic Chains. Acoustical and Optical Phonons. Qualitative Description of the Phonon Spectrum in Solids. Dulong and Petit's Law, Einstein and Debye theories of specific heat of solids. T³ law. (12 Lectures)

Magnetic Properties of Matter: Dia-, Para-, Ferri- and Ferromagnetic Materials. Classical Langevin Theory of Dia- and Paramagnetic Domains. Quantum Mechanical Treatment of Paramagnetism. Curie's law, Weiss's Theory of Ferromagnetism and Ferromagnetic Domains. Discussion of B-H Curve. Hysteresis and Energy Loss (10 Lectures)

Dielectric Properties of Materials: Polarization. Local Electric Field at an Atom. Depolarization Field. Electric Susceptibility. Polarizability. Clausius Mosotti Equation. Classical Theory of Electric Polarizability. Normal and Anomalous Dispersion. Cauchy and Sellmeir relations. Langevin-Debye equation. Complex Dielectric Constant. **(9 Lectures)**

Elementary band theory: Periodic potential and Bloch Theorem, Kronig Penny model. Band Gap. Conductor, Semiconductor (P and N type) and insulator. Conductivity of Semiconductor, mobility, Hall Effect. Measurement of conductivity (04 probe method) & Hall coefficient. (11 Lectures)

Superconductivity: Experimental Results. Critical Temperature. Critical magnetic field. Meissner effect. Type I and type II Superconductors, Idea of BCS theory (No derivation)

(6 Lectures)

Reference Books:

Introduction to Solid State Physics, Arun Kumar, PHI Learning Pvt. Ltd., New delhi.

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- Introduction to Solid State Physics, Charles Kittel, 8th Edition, 2004, Wiley India Pvt. Ltd.
- Elements of Solid State Physics, J.P. Srivastava, 2nd Edition, 2006, Prentice-Hall of India
- Introduction to Solids, Leonid V. Azaroff, 2004, Tata Mc-Graw Hill
- Solid State Physics, N.W. Ashcroft and N.D. Mermin, 1976, Cengage Learning
- Solid-state Physics, H. Ibach and H. Luth, 2009, Springer
- Elementary Solid State Physics, 1/e M. Ali Omar, 1999, Pearson India
- Solid State Physics, M.A. Wahab, 2011, Narosa Publications



- Solid State Physics, Dekker
- Solid State Physics, J. P. Srivastava
- Solid State Physics, Mahan and Mahto

PHYSICS PRACTICAL-C V LAB 60 Lectures

Use C/C++/Scilab for solving the following problems based on Quantum Mechanics like

1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom:

$$\frac{d^2y}{dr^2} = A(r)u(r), A(r) = 2m/h^2 \times [V(r) - E] \text{ where } V(r) = -e^2/r$$

Here, m is the reduced mass of the electron. Obtain the energy eigenvalues and plot the corresponding wavefunctions. Remember that the ground state energy of the hydrogen atom is \approx -13.6 eV. Take e = 3.795 (eVÅ)^{1/2}, hc = 1973 (eVÅ) and m = 0.511x10⁶ eV/c².

2. Solve the s-wave radial Schrodinger equation for an atom:

$$\frac{d^2y}{dr^2} = A(r)u(r), A(r) = 2m/h^2 * [V(r) - E]$$

where m is the reduced mass of the system (which can be chosen to be the mass of an electron), for the screened coulomb potential $V(r) = -e^2/r \times (e^{-r/a})$

Find the energy (in eV) of the ground state of the atom to an accuracy of three significant digits. Also, plot the corresponding wavefunction. Take e = 3.795 $(eVÅ)^{1/2}$, $m = 0.511x10^6$ eV/c^2 , and a = 3 Å, 5 Å, 7 Å. In these units $\hbar c = 1973$ (eVÅ). The ground state energy is expected to be above -12 eV in all three cases.

3. Solve the s-wave radial Schrodinger equation for a particle of mass m:

$$\frac{d^2y}{dr^2} = A(r)u(r), A(r) = 2m/h^2 \times \left[V(r) - E\right]$$

For the anharmonic oscillator potential $V(r) = \frac{1}{2} kr^2 + \frac{1}{3}br^3$ for the ground state energy (in MeV) of particle to an accuracy of three significant digits. Also, plot the corresponding wave function. Choose $m = 940 \text{ MeV/c}^2$, $k = 100 \text{ MeV fm}^{-2}$, b = 0, 10, 30 MeV fm⁻³. In these units, ch = 197.3 MeV fm. The ground state energy I expected to lie between 90 and 110 MeV for all three cases.

4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:

$$\frac{d^2y}{dr^2} = A(r)u(r), A(r) = 2\mu/h^2 \times [v(r) - E]$$

Where μ is the reduced mass of the dwo-atom system for the Morse potential



$$(r) = D(e^{-2\alpha r'} - e^{-\alpha r'}), r' = (r-r_0)/r$$

Find the lowest vibrational energy (in MeV) of the molecule to an accuracy of three significant digits. Also plot the corresponding wave function.

Take: $m = 940 \times 106 \text{ eV/C}^2$, D = 0.755501 eV, $\alpha = 1.44$, $r_0 = 0.131349 \text{ Å}$.

Laboratory based experiments:

- 5. Study of Electron spin resonance- determine magnetic field as a function of the resonance frequency
- 6. Study of Zeeman effect: with external magnetic field; Hyperfine splitting
- 7. To show the tunneling effect in tunnel diode using I-V characteristics.
- 8. Quantum efficiency of CCDs

Reference Books:

- Schaum's outline of Programming with C++. J.Hubbard, 2000,McGraw-- Hill Publication
- Numerical Recipes in C: The Art of Scientific Computing, W.H. Pressetal., 3rd Edn., 2007, Cambridge University Press.
- An introduction to computational Physics, T.Pang, 2nd Edn.,2006, Cambridge Univ. Press
- Simulation of ODE/PDE Models with MATLAB®, OCTAVE and SCILAB: Scientific & Engineering Applications: A. Vande Wouwer, P. Saucez, C. V. Fernández.2014 Springer.
- Scilab (A Free Software to Matlab): H. Ramchandran, A.S. Nair. 2011 S. Chand & Co.
- Scilab Image Processing: L.M.Surhone.2010 Betascript Publishing ISBN:978-6133459274

PHYSICS PRACTICAL-C V LAB 60 Lectures

- 1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)
- 2. To measure the Magnetic susceptibility of Solids.
- 3. Verification of Curie-Weiss Law for a ferroelectric material.
- 4. To measure the Dielectric Constant of a dielectric Materials with frequency
- 5. To determine the refractive index of a dielectric layer using SPR
- 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis.
- 7. To measure the resistivity of a semiconductor (Ge) with temperature by four-probe method (room temperature to 150^{0} C) and to determine its band gap.
- 8. To determine the Hall coefficient of a semiconductor sample.

Reference Books

- Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, 1971, Asia Publishing House.
- Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers.
- A Text Book of Practical Physics, I.Prakash & Ramakrishna, 11th Ed., 2011, Kitab Mahal
- Elements of Solid State Physics, J.P. Srivastava, 2nd Ed., 2006, Prentice-Hall of India.



 SEMESTER VI	

PHYSICS-C XIII: ELECTROMAGNETIC THEORY (Credits: Theory-04, Practicals-02)
Theory: 60 Lectures

Maxwell Equations: Review of Maxwell's equations. Displacement Current. Vector and Scalar Potentials. Gauge Transformations: Lorentz and Coulomb Gauge. Boundary Conditions at Interface between Different Media. Wave Equations. Plane Waves in Dielectric Media. Poynting vector and Poynting Theorem. Electromagnetic (EM) Energy Density.

(14 Lectures)

EM Wave Propagation in Unbounded Media: Plane EM waves through vacuum and isotropic dielectric medium, transverse nature of plane EM waves, refractive index and dielectric constant, wave impedance. Propagation through conducting media, relaxation time, skin depth. Wave propagation through dilute plasma, electrical conductivity of ionized gases, plasma frequency, refractive index, skin depth. (10 Lectures)

EM Wave in Bounded Media: Boundary conditions at a plane interface between two media. Reflection & Refraction of plane waves at plane interface between two dielectric media-Laws of Reflection & Refraction. Fresnel's Formulae for perpendicular & parallel polarization cases, Brewster's law. Reflection & Transmission coefficients. Total internal reflection, evanescent waves. (12 Lectures)

Polarization of Electromagnetic Waves: Description of Linear, Circular and Elliptical Polarization. Propagation of E.M. Waves in Anisotropic Media. Double Refraction. Polarization by Double Refraction. Nicol Prism. Ordinary & extraordinary refractive indices. Production & detection of Plane, Circularly and Elliptically Polarized Light. Phase Retardation Plates: Quarter-Wave and Half-Wave Plates. Babinet Compensator and its Uses. Analysis of Polarized Light (12 Lectures)

Rotatory Polarization: Optical Rotation. Biot's Laws for Rotatory Polarization. Fresnel's Theory of optical rotation. Calculation of angle of rotation. Experimental verification of Fresnel's theory. Specific rotation. Laurent's half-shade polarimeter. (5 Lectures)

Optical Fibres:- Numerical Aperture. Step and Graded Indices (Definitions Only). Single and Multiple Mode Fibres (Concept and Definition Only). (3 Lectures)

Reference Books:

- Electromagnetic Theory, Chopra and Agarwal.
- Electromagnetics, B. B. Laud.



- Electromagnetic Theory,, Satya Prakash
- Electromagnetic Theory, Gupta and Kumar
- Introduction to Electrodynamics, D.J. Griffiths, 3rd Ed., 1998, Benjamin Cummings.
- Elements of Electromagnetics, M.N.O. Sadiku, 2001, Oxford University Press.
- Introduction to Electromagnetic Theory, T.L. Chow, 2006, Jones & Bartlett Learning
- Fundamentals of Electromagnetics, M.A.W. Miah, 1982, Tata McGraw Hill
- Electromagnetic field Theory, R.S. Kshetrimayun, 2012, Cengage Learning
- Electromagnetic Field Theory for Engineers & Physicists, G. Lehner, 2010, Springer

Additional Books for Reference

- Electromagnetic Fields & Waves, P.Lorrain & D.Corson, 1970, W.H.Freeman & Co.
- Electromagnetics, J.A. Edminster, Schaum Series, 2006, Tata McGraw Hill.
- Electromagnetic field theory fundamentals, B. Guru and H. Hiziroglu, 2004, Cambridge University Press

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PHYSICS-C XIV: STATISTICAL MECHANICS (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

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Classical Statistics: Macrostate & Microstate, Elementary Concept of Ensemble, Phase Space, Entropy and Thermodynamic Probability, Maxwell-Boltzmann Distribution Law, Partition Function, Thermodynamic Functions of an Ideal Gas, Classical Entropy Expression, Gibbs Paradox, Sackur Tetrode equation, Law of Equipartition of Energy (with proof) – Applications to Specific Heat and its Limitations. (18 Lectures)

Classical Theory of Radiation: Properties of Thermal Radiation. Blackbody Radiation. Kirchhoff's law. Stefan-Boltzmann law: Thermodynamic proof. Radiation Pressure. Wien's Displacement law. Wien's Distribution Law. Rayleigh-Jean's Law. (9 Lectures)

Quantum Theory of Radiation: Spectral Distribution of Black Body Radiation. Planck's Quantum Postulates. Planck's Law of Blackbody Radiation: Experimental Verification. Deduction of (1) Wien's Distribution Law, (2) Rayleigh-Jeans Law, (3) Stefan-Boltzmann Law, (4) Wien's Displacement law from Planck's law. (5 Lectures)

Bose-Einstein Statistics: B-E distribution law, Thermodynamic functions of a Degenerate Bose Gas, Bose Einstein condensation, properties of liquid He (qualitative description), Radiation as a photon gas and Thermodynamic functions of photon gas. Bose derivation of Planck's law. (13 Lectures)

Fermi-Dirac Statistics: Fermi-Dirac Distribution Law, Thermodynamic functions of a Degenerate Fermi Gas, Fermi Energy, Electron gas in a Metal, Specific Heat of Metals, Relativistic Fermi gas, White Dwarf Stars, Chandrasekhar Mass Limit. (15 Lectures)

Reference Books:

- Statistical Mechanics, R.K. Pathria, Butterworth Heinemann: 2nd Ed., 1996, Oxford University Press.
- Statistical Physics, Berkeley Physics Course, F. Reif, 2008, Tata McGraw-Hill
- Statistical and Thermal Physics, S. Lokanathan and R.S. Gambhir. 1991, Prentice Hall
- Thermodynamics, Kinetic Theory and Statistical Thermodynamics, Francis W. Sears and Gerhard L. Salinger, 1986, Narosa.
- Modern Thermodynamics with Statistical Mechanics, Carl S. Helrich, 2009, Springer
- An Introduction to Statistical Mechanics & Thermodynamics, R.H. Swendsen, 2012, Oxford Univ. Press

Statistical Mechanics, K. Huang.



PHYSICS PRACTICAL-C VI LAB 60 Lectures

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- 1. To verify the law of Malus for plane polarized light.
- 2. To determine the specific rotation of sugar solution using Polarimeter.
- 3. To analyze elliptically polarized Light by using a Babinet's compensator.
- 4. To determine the refractive Index of (1) glass and (2) a liquid by total internal reflection using a Gaussian eyepiece.
- 5. To study the polarization of light by reflection and determine the polarizing angle for airglass interface.
- 6. To verify the Stefan's law of radiation and to determine Stefan's constant.
- 7. To determine the Boltzmann constant using V-I characteristics of PN junction diode.

Reference Books

- Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, 1971, Asia Publishing House.
- Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
- A Text Book of Practical Physics, I.Prakash & Ramakrishna, 11th Ed., 2011, Kitab Mahal
- Electromagnetic Field Theory for Engineers & Physicists, G. Lehner, 2010, Springer

PHYSICS PRACTICAL-C VI LAB 60 Lectures

Use C/C++/Scilab for solving the problems based on Statistical Mechanics like

- 1. Plot Planck's law for Black Body radiation and compare it with Wein's Law and Raleigh-Jeans Law at high temperature (room temperature) and low temperature.
- 2. Plot Specific Heat of Solids by comparing (a) Dulong-Petit law, (b) Einstein distribution function, (c) Debye distribution function for high temperature (room temperature) and low temperature and compare them for these two cases
- 3. Plot Maxwell-Boltzmann distribution function versus temperature.
- 4. Plot Fermi-Dirac distribution function versus temperature.
- 5. Plot Bose-Einstein distribution function versus temperature.

Reference Books:

- Elementary Numerical Analysis, K.E. Atkinson, 3 r d Edn. 2007, Wiley India Edition
- Statistical Mechanics, R.K. Pathria, Butterworth Heinemann: 2nd Ed., 1996, Oxford University Press.
- Thermodynamics, Kinetic Theory and Statistical Thermodynamics, Francis W.Sears and Gerhard L. Salinger, 1986, Narosa.
- Modern Thermodynamics with Statistical Mechanics, Carl S. Helrich, 2009, Springer
- Simulation of ODE/PDE Models with MATLAB®, OCTAVE and SCILAB: Scientific and Engineering Applications: A. Vande Wouwer, P. Saucez, C. V. Fernández. 2014 Springer ISBN: 978-3319067896
- Scilab by example: M. Affouf, 2012. ISBN: 978-1479203444
- Scilab Image Processing: L.M.Surhone. 2010, Betascript Pub., ISBN: 978-6133459274



DISCIPLINE SPECIFIC ELECTIVE

PHYSICS-DSE1: NUCLEAR AND PARTICLE PHYSICS

(Credits: Theory-05, Tutorials-01) Theory: 75 Lectures

General Properties of Nuclei: Constituents of nucleus and their Intrinsic properties, quantitative facts about mass, radii, charge density (matter density), binding energy, average binding energy and its variation with mass number, main features of binding energy versus mass number curve, N/A plot, angular momentum, parity, magnetic moment, electric moments, nuclear excites states. (10 Lectures)

Nuclear Models: Liquid drop model approach, semi empirical mass formula and significance of its various terms, condition of nuclear stability, Fermi gas model (degenerate fermion gas, nuclear symmetry potential in Fermi gas), evidence for nuclear shell structure, nuclear magic numbers, basic assumption of shell model, concept of mean field, residual interaction, concept of nuclear force.

(12 Lectures)

Radioactivity decay: (a) Alpha decay: basics of α -decay processes, theory of α - emission, Gamow factor, Geiger Nuttall law, α -decay spectroscopy. (b) β -decay: energy kinematics for β -decay, positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays emission & kinematics, internal conversion. (12 Lectures)

Nuclear Reactions: Types of Reactions, Conservation Laws, kinematics of reactions, Q-value, reaction rate, reaction cross section, Concept of compound and direct Reaction, resonance reaction, Coulomb scattering (Rutherford scattering). (10 Lectures)

Interaction of Nuclear Radiation with matter: Energy loss due to ionization (Bethe- Block formula), energy loss of electrons, Cerenkov radiation. Gamma ray interaction through matter, photoelectric effect, Compton scattering, pair production, neutron interaction with matter.

(7 Lectures)

Detector for Nuclear Radiations: Gas detectors: estimation of electric field, mobility of particle, for ionization chamber and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). Semiconductor Detectors (Si and Ge) for charge particle and photon detection (concept of charge carrier and mobility), neutron detector.

(10 Lectures)

Particle physics: Particle interactions; basic features, types of particles and its families. Symmetries and Conservation Laws: energy and momentum, angular momentum, parity, baryon number, Lepton number, Concept of quark model. (14 Lectures)



Reference Books:

- Introductory nuclear Physics by Kenneth S. Krane (Wiley India Pvt. Ltd., 2008).
- Concepts of nuclear physics by Bernard L. Cohen. (Tata Mcgraw Hill, 1998).
- Introduction to the physics of nuclei & particles, R.A. Dunlap. (Thomson Asia, 2004).
- Introduction to High Energy Physics, D.H. Perkins, Cambridge Univ. Press
- Introduction to Elementary Particles, D. Griffith, John Wiley & Sons
- Quarks and Leptons, F. Halzen and A.D. Martin, Wiley India, New Delhi
- Basic ideas and concepts in Nuclear Physics An Introductory Approach by K. Heyde (IOP- Institute of Physics Publishing, 2004).
- Radiation detection and measurement, G.F. Knoll (John Wiley & Sons, 2000).
- Physics and Engineering of Radiation Detection, Syed Naeem Ahmed (Academic Press, Elsevier, 2007).
- Theoretical Nuclear Physics, J.M. Blatt & V.F.Weisskopf (Dover Pub.Inc., 1991



PHYSICS-DSE2: CLASSICAL DYNAMICS

(Credits: Theory-05, Tutorials-01) Theory: 75 Lectures

The emphasis of the course is on applications in solving problems of interest to physicists. Students are to be examined on the basis of problems, seen and unseen.

Classical Mechanics of Point Particles: Generalised coordinates and velocities. Hamilton's Principle, Lagrangian and Euler-Lagrange equations. Applications to simple systems such as coupled oscillators. Canonical momenta & Hamiltonian. Hamilton's equations of motion. Applications: Hamiltonian for a harmonic oscillator, particle in a central force field. Poisson brackets. Canonical transformations. (22 Lectures)

Special Theory of Relativity: Postulates of Special Theory of Relativity. Lorentz Transformations. Minkowski space. Time-dilation, length contraction & twin paradox. Four-vectors: space-like, time-like & light-like. Four-velocity and acceleration. Four-momentum and energy-momentum relation. Doppler effect from a four vector perspective. Concept of four-force. Conservation of four-momentum. Relativistic kinematics. Application to two-body decay of an unstable particle. Electric and magnetic fields due to a uniformly moving charge. Equation of motion of charged particle & Maxwell's equations in tensor form. Motion of charged particles in external electric and magnetic fields. (38 Lectures)

Electromagnetic radiation: Review of retarded potentials. Potentials due to a moving charge: Lienard Wiechert potentials. Electric & Magnetic fields due to a moving charge: Power radiated, Larmor's formula and its relativistic generalisation. (15 Lectures)

Reference Books:

•Intoduction to Classical mechanics, Nikhil Ranjan Roy, 2016, Vikash Publishing House Pvt. Ltd.

Classical Mechanics, H.Goldstein, C.P. Poole, J.L. Safko, 3rd Edn. 2002, Pearson Education.

- Mechanics, L. D. Landau and E. M. Lifshitz, 1976, Pergamon.
- Classical Electrodynamics, J.D. Jackson, 3rd Edn., 1998, Wiley.
- The Classical Theory of Fields, L.D Landau, E.M Lifshitz, 4th Edn., 2003, Elsevier.
- Introduction to Electrodynamics, D.J. Griffiths, 2012, Pearson Education.
- Classical Mechanics: An introduction, Dieter Strauch, 2009, Springer.
- Solved Problems in classical Mechanics, O.L. Delange and J. Pierrus, 2010, Oxford Press

PHYSICS-DSE3: DISSERTATION

Every student shall undertake one project dissertation approved by the concerned subject teacher of the Department/College of the department. The progress of the project dissertation shall be monitored, at regular intervals, by the faculty members.



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PHYSICS-DSE 4: EXPERIMENTAL TECHNIQUES

(Credits: Theory-04, Practicals-02) Theory: 60 Lectures

Measurements: Accuracy and precision. Significant figures. Error and uncertainty analysis. Types of errors: Gross error, systematic error, random error. Statistical analysis of data

(Arithmetic mean, deviation from mean, average deviation, standard deviation, chi-square) and curve fitting. Guassian distribution. (8 Lectures)

Signals and Systems: Periodic and aperiodic signals. Impulse response, transfer function and frequency response of first and second order systems. Fluctuations and Noise in measurement system. S/N ratio and Noise figure. Noise in frequency domain. Sources of Noise: Inherent fluctuations, Thermal noise, Shot noise, 1/f noise (8 Lectures)

Shielding and Grounding: Methods of safety grounding. Energy coupling. Grounding. Shielding: Electrostatic shielding. Electromagnetic Interference. (4 Lectures)

Transducers & industrial instrumentation (working principle, efficiency, applications):

Static and dynamic characteristics of measurement Systems. Generalized performance of systems, Zero order first order, second order and higher order systems. Electrical, Thermal and Mechanical systems. Calibration. Transducers and sensors. Characteristics of Transducers. Transducers as electrical element and their signal conditioning. Temperature transducers: RTD, Thermistor, Thermocouples, Semiconductor type temperature sensors (AD590, LM35, LM75). Sinear Position transducer: Strain gauge, Linear variable differential transformer (LVDT), Capacitance charge transducers. Radiation Sensors: Principle of Gas filled detector, ionization chamber, scintillation detector. (21 Lectures)

Digital Multimeter: Comparison of analog and digital instruments. Block diagram of digital multimeter, principle of measurement of I, V, C. Accuracy and resolution of measurement.

(5 Lectures)

Vacuum Systems: Characteristics of vacuum: Gas law, Mean free path. Application of vacuum. Vacuum system- Chamber, Mechanical pumps, Diffusion pump & Turbo Modular pump, Pumping speed, Pressure gauges (Pirani, Penning, ionization). (14 Lectures)

Reference Books:

- Measurement, Instrumentation and Experiment Design in Physics and Engineering, M. Sayer and A. Mansingh, PHI Learning Pvt. Ltd.
- Experimental Methods for Engineers, J.P. Holman, McGraw Hill
- Introduction to Measurements and Instrumentation, A.K. Ghosh, 3rd Edition, PHI Learning Pvt. Ltd.
- Transducers and Instrumentation, D.V.S. Murty, 2nd Edition, PHI Learning Pvt. Ltd.
- Instrumentation Devices and Systems, C.S. Rangan, G.R. Sarma, V.S.V. Mani, Tata McGraw Hill
- Principles of Electronic Instrumentation, D. Patranabis, PHI Learning Pvt. Ltd.



•]	Electron	ic circuits	: Handboo	k of desig	gn & app	lications,	U.Tietze,	Ch.Schenk,	Springer



PHYSICS-DSE 5: EARTH SCIENCE

(Credits: Theory-05, Tutorials-01) Theory: 75 Lectures

1. The Earth And The Universe:

- (a) Origin of universe, creation of elements and earth. A Holistic understanding of our dynamic planet through Astronomy, Geology, Meteorology and Oceanography. Introduction to various branches of Earth Sciences.
- (b) General characteristics and origin of the Universe. The Milky Way galaxy, solar system, Earth's orbit and spin, the Moon's orbit and spin. The terrestrial and Jovian planets. Meteorites & Asteroids. Earth in the Solar system, origin, size, shape, mass, density, rotational and revolution parameters and its age.
- (c) Energy and particle fluxes incident on the Earth.
- (d) The Cosmic Microwave Background.

(17 Lectures)

2. Structure:

- (a) The Solid Earth: Mass, dimensions, shape and topography, internal structure, magnetic field, geothermal energy. How do we learn about Earth's interior?
- (b) The Hydrosphere: The oceans, their extent, depth, volume, chemical composition. River systems.
- (c) The Atmosphere: variation of temperature, density and composition with altitude, clouds.
- (d) The Cryosphere: Polar caps and ice sheets. Mountain glaciers.
- (e) The Biosphere: Plants and animals. Chemical composition, mass. Marine and land organisms. (18 Lectures)

3. Dynamical Processes:

- (a) The Solid Earth: Origin of the magnetic field. Source of geothermal energy. Convection in Earth's core and production of its magnetic field. Mechanical layering of the Earth. Introduction to geophysical methods of earth investigations. Concept of plate tectonics; seafloor spreading and continental drift. Geodynamic elements of Earth: Mid Oceanic Ridges, trenches, transform faults and island arcs. Origin of oceans, continents, mountains and rift valleys. Earthquake and earthquake belts. Volcanoes: types, products and distribution.
- (b) The Hydrosphere: Ocean circulations. Oceanic current system and effect of coriolis forces. Concepts of eustasy, tend air-sea interaction; wave erosion and beach processes. Tides. Tsunamis.
- (c) The Atmosphere: Atmospheric circulation. Weather and climatic changes. Cyclones. Climate:



- i. Earth's temperature and greenhouse effect.
- ii. Paleoclimate and recent climate changes.
- iii. The Indian monsoon system.
- (d) Biosphere: Water cycle, Carbon cycle, Nitrogen cycle, Phosphorous cycle. The role of cycles in maintaining a steady state. (18 Lectures)

4. Evolution:

Nature of stratigraphic records, Standard stratigraphic time scale and introduction to the concept of time in geological studies. Introduction to geochronological methods in their application in geological studies. History of development in concepts of uniformitarianism, catastrophism and neptunism. Law of superposition and faunal succession. Introduction to the geology and geomorphology of Indian subcontinent.

- 1. Time line of major geological and biological events.
- 2. Origin of life on Earth.
- 3. Role of the biosphere in shaping the environment.
- 4. Future of evolution of the Earth and solar system: Death of the Earth. (18 Lectures)

5. Disturbing The Earth – Contemporary Dilemmas

- (a) Human population growth.
- (b) Atmosphere: Green house gas emissions, climate change, air pollution.
- (c) Hydrosphere: Fresh water depletion.
- (d) Geosphere: Chemical effluents, nuclear waste.
- (e) Biosphere: Biodiversity loss.

Deforestation. Robustness and fragility of ecosystems.

(4 Lectures)

Reference Books:

- Planetary Surface Processes, H. Jay Melosh, Cambridge University Press, 2011.
- Consider a Spherical Cow: A course in environmental problem solving, John Harte. University Science Books
- Holme's Principles of Physical Geology. 1992. Chapman & Hall.
- Emiliani, C, 1992. Planet Earth, Cosmology, Geology and the Evolution of Life and Environment. Cambridge University Press.



PHYSICS-DSE 6: MEDICAL PHYSICS

(Credits: Theory-04, Practicals-02) Theory: 60 Lectures

Physics of The Body-I

Mechanics of the body: Skeleton, forces, and body stability. Muscles and the dynamics of body movement, Physics of body crashing. **Energy household of the body:** Energy balance in the body, Energy consumption of the body, Heat losses of the body, **Pressure system of the body:** Physics of breathing, Physics of cardiovascular system. (10 Lectures)

Physics of The Body-II

Acoustics of the body: Nature and characteristics of sound, Production of speech, Physics of the ear, Diagnostics with sound and ultrasound. **Optical system of the body:** Physics of the eye. **Electrical system of the body:** Physics of the nervous system, Electrical signals and information transfer. (10 Lectures)

Physics of Diagnostic And Therapeutic Systems-I

X-Rays: Electromagnetic spectrum, production of x-rays, x-ray spectra- Brehmsstrahlung Characteristic x-ray, X-ray tubes, Coolidge tube, x-ray tube design, tube cooling stationary mode, Rotating anode x-ray tube, Tube rating, quality and intensity of x-ray. X-ray generator circuits, half wave and full wave rectification, filament circuit, kilo voltage circuit, high frequency generator. (7 Lectures)

Radiation Physics: Radiation units, exposure, absorbed dose, effective dose, inverse square law, interaction of radiation with matter, linear attenuation coefficient. Radiation Detectors, Geiger counter, Scintillation counter, ionization chamber, semiconductor detectors.

(7 Lectures)

Medical Imaging Physics: X-ray diagnostics and imaging, Physics of nuclear magnetic resonance (NMR), NMR imaging, MRI Radiological imaging, X-ray film, film processing, fluoroscopy, computed tomography scanner, principle function, display, generations, mammography. Ultrasound imaging, magnetic resonance imaging, thyroid uptake system, Gamma camera (Only Principle, function and display) (9 Lectures)

Radiation Therapy Physics: Radiotherapy, kilo voltage machines, deep therapy machines, Telecobalt machines, Telecobalt units, Medical linear accelerator. Basics of Teletherapy units, deep x-ray, Radiation Protection, external beam characteristics, phantom, dose maximum and build up bolus, percentage depth dose, back scatter factor. (6 Lectures)

Radiation And Radiation Protection: Principles of radiation protection, protective materials-radiation effects, somatic, genetic stochastic & deterministic effect, Personal monitoring devices, TLD film badge, pocket dosimeter. Radiation dosimetry, Natural radioactivity, Biological effects of radiation. (6 Lectures)

Physics of Diagnostic And Therapeutic Systems-II

Diagnostic nuclear medicine: Radiopharmaceuticals for radioisotope imaging, Radioisotope imaging equipment, Single photon and positron emission tomography.



Therapeutic nuclear medicine: Interaction between radiation and matter Dose and isodose in radiation treatment. (5 Lectures)

Reference Books:

- Medical Physics, J.R. Cameron and J.G.Skofronick, Wiley (1978)
- Basic Radiological Physics Dr. K. Thayalan Jayapee Brothers Medical Publishing Pvt. Ltd. New Delhi (2003)
- Christensen's Physics of Diagnostic Radiology: Curry, Dowdey and Murry Lippincot Williams and Wilkins (1990)
- Physics of the human body, Irving P. Herman, Springer (2007).
- Physics of Radiation Therapy: F M Khan Williams and Wilkins, 3rd edition (2003)
- The essential physics of Medical Imaging: Bushberg, Seibert, Leidholdt and Boone Lippincot Williams and Wilkins, Second Edition (2002)
- The Physics of Radiology-H E Johns and Cunningham.

PRACTICAL- DSE-1 LAB: EXPERIMENTAL TECHNIQUES 60 Lectures

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- 1. Determine output characteristics of a LVDT & measure displacement using LVDT
- 2. Measurement of Strain using Strain Gauge.
- 3. Measurement of level using capacitive transducer.
- 4. To study the characteristics of a Thermostat and determine its parameters.
- 5. Study of distance measurement using ultrasonic transducer.
- 6. Calibrate Semiconductor type temperature sensor (AD590, LM35, or LM75)
- 7. Comparison of pickup of noise in cables of different types (co-axial, single shielded, double shielded, without shielding) of 2m length, understanding of importance of grounding using function generator of mV level & an oscilloscope.
- 8. To design and study the Sample and Hold Circuit.
- 9. Design and analyze the Clippers and Clampers circuits using junction diode
- 10. To plot the frequency response of a microphone. using a O-meter.
- 11. To measure Q of a coil and influence of frequency,

Reference Books:

- Electronic circuits: Handbook of design and applications, U. Tietze and C. Schenk, 2008, Springer
- Basic Electronics: A text lab manual, P.B. Zbar, A.P. Malvino, M.A. Miller, 1990, Mc-Graw
- Measurement, Instrumentation and Experiment Design in Physics & Engineering, M. Sayer and A. Mansingh, 2005, PHI Learning.

PHYSICS-DSE 1 LAB: MEDICAL PHYSICS 60 Lectures

- 1. Understanding the working of a manual Hg Blood Pressure monitor and measure the Blood Pressure.
- 2. Understanding the working of a manual optical eye-testing machine and to learn eye-testing procedure.
- 3. Correction of Myopia (short sightedness) using a combination of lenses on an optical bench/breadboard.
- 4. Correction of Hypermetropia/Hyperopia (long sightedness) using a combination of lenses on an optical bench/breadboard.
- 5. To learn working of Thermoluminescent dosimeter (TLD) badges and measure the background radiation.
- 6. Familiarization with Geiger-Muller (GM) Counter and to measure background radiation.



7. Familiarization with Radiation meter and to measure background radiation.

Reference Books:

- Basic Radiological Physics, Dr. K. Thayalan Jayapee Brothers Medical Publishing Pvt. Ltd. New Delhi (2003)
- Christensen's Physics of Diagnostic Radiology: Curry, Dowdey and Murry Lippincot Williams and Wilkins (1990)
- Physics of Radiation Therapy: F M Khan Williams and Wilkins, 3rd edition (2003)
- The essential physics of Medical Imaging: Bushberg, Seibert, Leidholdt and Boone Lippincot Williams and Wilkins, Second Edition (2002)
- The Physics of Radiology-H E Johns and Cunningham.



PHYSICS-DSE 7: BIO-PHYSICS

(Credits: Theory-05, Tutorials-01) Theory: 75 Lectures

Building Blocks & Structure of Living State: Atoms and ions, molecules essential for life, what is life. **Living state interactions:** Forces and molecular bonds, electric & thermal interactions, electric dipoles, casimir interactions, domains of physics in biology.

(18 Lectures)

Heat Transfer in biomaterials: Heat Transfer Mechanism, The Heat equation, Joule heating of tissue. **Living State Thermodynamics:** Thermodynamic equilibrium, fIrst law of thermodynamics and conservation of energy. Entropy and second law of thermodynamics, Physics of many particle systems, Two state systems, continuous energy distribution, Composite systems, Casimir contribution of free energy, Protein folding and unfolding.

(19 Lectures)

Open systems and chemical thermodynamics: Enthalpy, Gibbs Free energy and chemical potential, activation energy and rate constants, enzymatic reactions, ATP hydrolysis & synthesis, Entropy of mixing, The grand canonical ensemble, Haemoglobin. **Diffusion and transport** Maxwell-Boltzmann statistics, Fick's law of diffusion, sedimentation of Cell Cultures, diffusion in a centrifuge, diffusion in an electric field, Lateral diffusion in membranes, Navier stokes equation, Low Reynold's Number Transport, Active and passive membrane transport. (19 Lectures)

Fluids: Laminar and turbulent fluid flow, Bernoulli's equation, equation of continuity, venture effect, Fluid dynamics of circulatory systems, capillary action. Bioenergetics and Molecular motors: Kinesins, Dyneins, and microtubule dynamics, Brownian motion, ATP synthesis in Mitochondria, Photosynthesis in Chloroplasts, Light absorption in biomolecules, vibrational spectra of bio-biomolecules. (19 Lectures)

Reference Books:

- Introductory Biophysics, J. Claycomb, JQP Tran, Jones & Bartelett Publishers
- Aspects of Biophysics, Hughe S W, John Willy and Sons.
- Essentials of Biophysics by P Narayanan, New Age International



PHYSICS-DSE 8: ASTRONOMY & ASTROPHYSICS

(Credits: Theory-05, Tutorials-01) Theory: 75 Lectures

Astronomical Scales: Astronomical Distance, Mass and Time, Scales, Brightness, Radiant Flux and Luminosity, Measurement of Astronomical Quantities Astronomical Distances, Stellar Radii, Masses of Stars, Stellar Temperature. Basic concepts of positional astronomy: Celestial Sphere, Geometry of a Sphere, Spherical Triangle, Astronomical Coordinate Systems, Geographical Coordinate Systems, Horizon System, Equatorial System, Diurnal Motion of the Stars, Conversion of Coordinates. Measurement of Time, Sidereal Time, Apparent Solar Time, Mean Solar Time, Equation of Time, Calendar. Basic Parameters of Stars: Determination of Distance by Parallax Method; Brightness, Radiant Flux and Luminosity, Apparent and Absolute magnitude scale, Distance Modulus; Determination of Temperature and Radius of a star; Determination of Masses from Binary orbits; Stellar Spectral Classification, Hertzsprung-Russell Diagram. (22 Lectures)

Astronomical techniques: Basic Optical Definitions for Astronomy (Magnification Light Gathering Power, Resolving Power and Diffraction Limit, Atmospheric Windows), Optical Telescopes (Types of Reflecting Telescopes, Telescope Mountings, Space Telescopes, Detectors and Their Use with Telescopes (Types of Detectors, detection Limits with Telescopes).

Physical principles: Gravitation in Astrophysics (Virial Theorem, Newton versus Einstein), Systems in Thermodynamic Equilibrium, Theory of Radiative Transfer (Radiation Field, Radiative Transfer Equation), Optical Depth; Solution of Radiative Transfer Equation, Local Thermodynamic Equilibrium

(6 Lectures)

The Sun (Solar Parameters, Solar Photosphere, Solar Atmosphere, Chromosphere. Corona, Solar Activity, Basics of Solar Magnetohydrodynamics. Helioseismology). **The solar family** (Solar System: Facts and Figures, Origin of the Solar System: The Nebular Model, Tidal Forces and Planetary Rings, Extra-Solar Planets. **Stellar spectra and classification Structure** (Atomic Spectra Revisited, Stellar Spectra, Spectral Types and Their Temperature Dependence, Black Body Approximation, H R Diagram, Luminosity Classification)

(7 Lectures)

Stellar structure: Hydrostatic Equilibrium of a Star, Virial Theorem, Sources of Stellar Energy, Modes of Energy Transport, Simple Stellar Model, Polytropic Stellar Model. **Star formation:** Basic composition of Interstellar medium, Interstellar Gas, Interstellar Dust, Formation of Protostar, Jeans criterion, Fragmentation of collapsing clouds, From protostar to Pre-Main Sequence, Hayashi Line. (8 Lectures)

Nucleosynthesis and stellar evolution: Cosmic Abundances, Stellar Nucleosynthesis, Evolution of Stars. **Compact stars:** Basic Familiarity with Compact Stars, Equation of State and Degenerate Gas of Fermions, Theory of White Dwarf, Chandrasekhar Limit, Gravitational Red-shift of Neutron Star, Detection of Neutron Star: Pulsars, Black Hole. **The milky way**: Basic Structure and Properties of the Milky Way, Nature of Rotation of the Milky Way (Differential Rotation of the Galaxy and Oort Constant, Rotation Curve of the



Galaxy and the Dark Matter, Nature of the Spiral Arms), Stars and Star Clusters of the Milky Way, Properties of and around the Galactic Nucleus. (11 Lectures)

Galaxies: Galaxy Morphology, Hubble's Classification of Galaxies, Elliptical Galaxies (The Intrinsic Shapes of Elliptical, de Vaucouleurs Law, Stars and Gas). Spiral and Lenticular Galaxies (Bulges, Disks, Galactic Halo) The Milky Way Galaxy, Gas and Dust in the Galaxy, Spiral Arms. (5 Lectures)

Active galaxies: 'Activities' of Active Galaxies, Classification of the Active Galaxies, Behaviour of Active Galaxies - Quasars and Radio Galaxies, The Nature of the Central Engine, Unified Model of the Various Active Galaxies. **(8 Lectures)**

Large scale structure & expanding universe: Hubble's Law (Distance- Velocity Relation), Clusters of Galaxies (Virial theorem and Dark Matter), Friedmann Equation and its Solutions, Early Universe and Nucleosynthesis (Cosmic Background Radiation, Evolving vs. Steady State Universe)

(8 Lectures)

Reference Books:

- Modern Astrophysics, B.W. Carroll & D.A. Ostlie, Addison-Wesley Publishing Co.
- Introductory Astronomy and Astrophysics, M. Zeilik and S.A. Gregory, 4th Edition, Saunders College Publishing.
- The physical universe: An introduction to astronomy, F.Shu, Mill Valley: University Science Books.
- Fundamental of Astronomy (Fourth Edition), H. Karttunen et al. Springer
- K.S. Krishnasamy, 'Astro Physics a modern perspective,' Reprint, New Age International (p) Ltd, New Delhi,2002. Baidyanath Basu, 'An introduction to Astro physics', Second printing, Prentice Hall of India Private limited, New Delhi,2001.
- Textbook of Astronomy and Astrophysics with elements of cosmology, V.B. Bhatia, Narosa Publication.



SKILL ENHANCEMENT COURSES

SEC-1: ELECTRICAL CIRCUIT NETWORK SKILLS (Credits: 02) Theory: 30 Lectures

The aim of this course is to enable the students to design and trouble shoots the electrical circuits, networks and appliances through hands-on mode

Basic Electricity Principles: Voltage, Current, Resistance, and Power. Ohm's law. Series, parallel, and series-parallel combinations. AC Electricity and DC Electricity. Familiarization with multimeter, voltmeter and ammeter. (4 Lectures)

Understanding Electrical Circuits: Main electric circuit elements and their combination. Rules to analyze DC sourced electrical circuits. Current and voltage drop across the DC circuit elements. Single-phase and three-phase alternating current sources. Rules to analyze AC sourced electrical circuits. Real, imaginary and complex power components of AC source. Power factor. Saving energy and money. (6 Lectures)

Generators and Transformers: DC Power sources. AC/DC generators. Inductance, capacitance, and impedance. Operation of transformers. (4 Lectures)

Electric Motors: Single-phase, three-phase & DC motors. Basic design. Interfacing DC or AC sources to control heaters & motors. Speed & power of ac motor. (6 Lectures)

Electrical Protection: Relays. Fuses and disconnect switches. Circuit breakers. Overload devices. Ground-fault protection. Grounding and isolating. Phase reversal. Surge protection. Interfacing DC or AC sources to control elements (relay protection device)

(6 Lectures)

Electrical Wiring: Different types of conductors and cables. Basics of wiring-Star and delta connection. Voltage drop and losses across cables and conductors. Instruments to measure current, voltage, power in DC and AC circuits. Insulation. (4 Lectures)

Reference Books:

- A text book in Electrical Technology B L Theraja S Chand & Co.
- A text book of Electrical Technology A K Theraja
- Performance and design of AC machines M G Say ELBS Edn.



SEC-2: BASIC INSTRUMENTATION SKILLS

(Credits: 02)
Theory: 30 Lectures

This course is to get exposure with various aspects of instruments and their usage through hands-on mode. Experiments listed below are to be done in continuation of the topics.

Basic of Measurement: Instruments accuracy, precision, sensitivity, resolution range etc. Errors in measurements and loading effects. **Multimeter:** Principles of measurement of dc voltage and dc current, ac voltage, ac current and resistance. Specifications of a multimeter and their significance. (4 Lectures)

Electronic Voltmeter: Advantage over conventional multimeter for voltage measurement with respect to input impedance and sensitivity. Principles of voltage, measurement (block diagram only). Specifications of an electronic Voltmeter/ Multimeter and their significance. **AC millivoltmeter:** Type of AC millivoltmeters: Amplifier- rectifier, and rectifier- amplifier. Block diagram ac millivoltmeter, specifications and their significance.

(4 Lectures)

Cathode Ray Oscilloscope: Block diagram of basic CRO. Construction of CRT, Electron gun, electrostatic focusing and acceleration (Explanation only– no mathematical treatment), brief discussion on screen phosphor, visual persistence & chemical composition. Time base operation, synchronization. Front panel controls. Specifications of a CRO and their significance. (6 Lectures)

Use of CRO for the measurement of voltage (dc and ac frequency, time period. Special features of dual trace, introduction to digital oscilloscope, probes. Digital storage Oscilloscope: Block diagram and principle of working. (4 Lectures)

Signal Generators and Analysis Instruments: Block diagram, explanation and specifications of low frequency signal generators. pulse generator, and function generator. Brief idea for testing, specifications. Distortion factor meter, wave analysis. (4 Lectures)

Digital Instruments: Principle and working of digital meters. Comparison of analog & digital instruments. Characteristics of a digital meter. Working principles of digital voltmeter. (4 Lectures)

Digital Multimeter: Block diagram and working of a digital multimeter. Working principle of time interval, frequency and period measurement using universal counter/ frequency counter, time- base stability, accuracy and resolution. (4 Lectures)

The test of lab skills will be of the following test items:

- 1. Use of an oscilloscope.
- 2. CRO as a versatile measuring device.
- 3. Circuit tracing of Laboratory electronic equipment,
- 4. Use of Digital multimeter/VTVM for measuring voltages
- 7. Study the layout of receiver circuit.



- 8. Trouble shooting a circuit
- 9. Balancing of bridges

Laboratory Exercises:

- 1. To observe the loading effect of a multimeter while measuring voltage across a low resistance and high resistance.
- 2. To observe the limitations of a multimeter for measuring high frequency voltage and currents.
- 3. To measure Q of a coil and its dependence on frequency, using a Q-meter.
- 4. Measurement of voltage, frequency, time period and phase angle using CRO.
- 6. Measurement of rise, fall and delay times using a CRO.

Open Ended Experiments:

- 1. Using a Dual Trace Oscilloscope
- 2. Converting the range of a given measuring instrument (voltmeter, ammeter)

Reference Books:

- A text book in Electrical Technology B L Theraja S Chand and Co.
- Performance and design of AC machines M G Say ELBS Edn.
- Digital Circuits and systems, Venugopal, 2011, Tata McGraw Hill.
- Logic circuit design, Shimon P. Vingron, 2012, Springer.
- Digital Electronics, Subrata Ghoshal, 2012, Cengage Learning.
- Electronic Devices and circuits, S. Salivahanan & N. S.Kumar, 3rd Ed., 2012, Tata Mc-Graw Hill
- Electronic circuits: Handbook of design and applications, U.Tietze, Ch.Schenk, 2008, Springer
- Electronic Devices, 7/e Thomas L. Floyd, 2008, Pearson India



SEC 3: RENEWABLE ENERGY AND ENERGY HARVESTING

(Credits: 02) Theory: 30 Lectures

The aim of this course is not just to impart theoretical knowledge to the students but to provide them with exposure and hands-on learning wherever possible

Fossil fuels and Alternate Sources of energy: Fossil fuels and Nuclear Energy, their limitation, need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity. (3 Lectures)

Solar energy: Solar energy, its importance, storage of solar energy, solar pond, non convective solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems. (6 Lectures)

Wind Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies. (3 Lectures)

Ocean Energy: Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices.

(3 Lectures)
Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Osmotic Power, Ocean Bio-mass.

(2 Lectures)

Geothermal Energy: Geothermal Resources, Geothermal Technologies. (2 Lectures)

Hydro Energy: Hydropower resources, hydropower technologies, environmental impact of hydro power sources. (2 Lectures)

Piezoelectric Energy harvesting: Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity, Piezoelectric parameters and modeling piezoelectric generators, Piezoelectric energy harvesting applications, Human power (4 Lectures)

Electromagnetic Energy Harvesting: Linear generators, physics mathematical models, recent applications (2 Lectures)

Carbon captured technologies, cell, batteries, power consumption (2 Lectures)

Environmental issues and Renewable sources of energy, sustainability. (1 Lecture)

Demonstrations and Experiments

- 1. Demonstration of Training modules on Solar energy, wind energy, etc.
- 2. Conversion of vibration to voltage using piezoelectric materials
- 3. Conversion of thermal energy into voltage using thermoelectric modules.



Reference Books:

- Non-conventional energy sources G.D Rai Khanna Publishers, New Delhi
- Solar energy M P Agarwal S Chand and Co. Ltd.
- Solar energy Suhas P Sukhative Tata McGraw Hill Publishing Company Ltd.
- Godfrey Boyle, "Renewable Energy, Power for a sustainable future", 2004, Oxford University Press, in association with The Open University.
- Dr. P Jayakumar, Solar Energy: Resource Assesment Handbook, 2009
- J.Balfour, M.Shaw and S. Jarosek, Photovoltaics, Lawrence J Goodrich (USA).
- http://en.wikipedia.org/wiki/Renewable_energy



SEC 4: RADIATION SAFETY

(Credits: 02) Theory: 30 Lectures

The aim of this course is for awareness and understanding regarding radiation hazards and safety. The list of laboratory skills and experiments listed below the course are to be done in continuation of the topics

Basics of Atomic and Nuclear Physics: Basic concept of atomic structure; X rays characteristic and production; concept of bremsstrahlung and auger electron, The composition of nucleus and its properties, mass number, isotopes of element, spin, binding energy, stable and unstable isotopes, law of radioactive decay, Mean life and half life, basic concept of alpha, beta and gamma decay, concept of cross section and kinematics of nuclear reactions, types of nuclear reaction, Fusion, fission. (6 Lectures)

Interaction of Radiation with matter: Types of Radiation: Alpha, Beta, Gamma and Neutron and their sources, sealed and unsealed sources, Interaction of Photons - Photoelectric , Compton Scattering, Pair Production, Linear and Mass Attenuation Coefficients, Interaction of Charged Particles: Heavy charged particles - Beth-Bloch Formula, Scaling laws, Mass Stopping Power, Range, Straggling, Channeling and Cherenkov radiation. Beta Particles- Collision and Radiation loss (Bremsstrahlung), Interaction of Neutrons- Collision, slowing down and Moderation. (7 Lectures)

Radiation detection and monitoring devices: Radiation Quantities and Units: Basic idea of different units of activity, KERMA, exposure, absorbed dose, equivalent dose, effective dose, collective equivalent dose, Annual Limit of Intake (ALI) and derived Air Concentration (DAC). Radiation detection: Basic concept and working principle of gas detectors (Ionization Chambers, Proportional Counter, Multi-Wire Proportional Counters (MWPC) and Gieger Muller Counter), Scintillation Detectors (Inorganic and Organic Scintillators), Solid States Detectors and Neutron Detectors, Thermo luminescent Dosimetry. (7 Lectures)

Radiation safety management: Biological effects of ionizing radiation, Operational limits and basics of radiation hazards evaluation and control: radiation protection standards, International Commission on Radiological Protection (ICRP) principles, justification, optimization, limitation, introduction of safety and risk management of radiation. Nuclear waste and disposal management. Brief idea about Accelerator driven Sub-critical system (ADS) for waste management. (5 Lectures)

Application of nuclear techniques: Application in medical science (e.g., MRI, PET, Projection Imaging Gamma Camera, radiation therapy), Archaeology, Art, Crime detection, Mining and oil. *Industrial Uses:* Tracing, Gauging, Material Modification, Sterization, Food preservation. (5 Lectures)

Experiments:

1. Study the background radiation levels using Radiation meter

Characteristics of Geiger Muller (GM) Counter:

- 2) Study of characteristics of GM tube and determination of operating voltage and plateau length using background radiation as source (without commercial source).
- 3) Study of counting statistics using background radiation using GM counter.



- 4) Study of radiation in various materials (e.g. KSO4 etc.). Investigation of possible radiation in different routine materials by operating GM at operating voltage.
- 5) Study of absorption of beta particles in Aluminum using GM counter.
- 6) Detection of α particles using reference source & determining its half life using spark counter
- 7) Gamma spectrum of Gas Light mantle (Source of Thorium)

Reference Books:

- W.E. Burcham and M. Jobes Nuclear and Particle Physics Longman (1995)
- G.F.Knoll, Radiation detection and measurements
- Thermoluninescense Dosimetry, Mcknlay, A.F., Bristol, Adam Hilger (Medical Physics Handbook
- W.J. Meredith and J.B. Massey, "Fundamental Physics of Radiology". John Wright and Sons, UK, 1989.
- J.R. Greening, "Fundamentals of Radiation Dosimetry", Medical Physics Hand Book Series, No.6, Adam Hilger Ltd., Bristol 1981.
- Practical Applications of Radioactivity and Nuclear Radiations, G.C. Lowental and P.L. Airey, Cambridge University Press, U.K., 2001
- Martin and S.A. Harbisor, An Introduction to Radiation Protection, John Willey & Sons, Inc. New York, 1981.
- NCRP, ICRP, ICRU, IAEA, AERB Publications.
- W.R. Hendee, "Medical Radiation Physics", Year Book Medical Publishers Inc. London, 1981

KOLHAN UNIVERSITY CHAIBASA



SYLLABUS FOR UNDER GRADUATE PROGRAMME CHOICE BASED CREDIT SEMESTER SYSTEM (CBCS) 2017



B. A. (HONS)
B. A. (PROGRAMME)

DEPARTMENT OF POLITICAL SCIENCE KOLHAN UNIVERSITY
CHAIBASA, JHARKHAND

EXAMINATION FRAMEWORK FOR UNDER-GRADUATION ARTS

Faculty of Arts and Humanities: The performance of the learners shall be evaluated into two components. The learner's performance shall be assessed by Continuous Internal Assessment with 30% marks in the first component by conducting the Semester End Examinations with 70% marks in the second component.

For the courses without Practical:

SL.No.	Evaluation type	Marks	
1	Mid-Term test (subjective/objective)		
2	Assignments/Projects/Posters/Quiz/Seminar		
3	Classroom attendance and active participation with leadership qualities, good manners and articulation in routine class instructional deliveries (case studies/ seminars/ presentation)	5	

End-Semester Examination (ESE)

- (a) The question paper for the ESE will be got set by the controller of Examinations of the Kolhan University by a panel as he/she deems appropriate. The question paper will be moderated by a teacher from the concerned Department nominated by the Head of the Department.
- (b) A candidate who does not pass the ESE in any course or is not able to appear due to some reason shall be permitted to appear in such failed course in the subsequent semester as the case may be.
 - (c) The examinees will be allotted three hours for answering these questions.

The question papers for the End Semester Examination (ESE) may have the following patterns:

Part	Particulars	Marks
А	10 objective type questions (MCQ/ True-False/Fill in the Blanks etc.) for 2 marks each.	10 X 2 = 20
В	8 short answer (25 words) type questions, of which 4 have to be answered for 5 marks each.	4 X 5 = 20
С	4 questions of long answer (400 words) type, of which 2 have to be answered for 15 marks each.	2 X 15 = 30
		Total = 70



Kolhan University, Chaibasa

Course Content of Political Science Under Choice Based Credit System(CBCS)

B.A.((Hons)	١

Semester	Courses	Credits	Examination	Full marks	Pass marks
	Core Course -1(CC-1)- Introduction to	(5+1)=6	Semester End	70	28
	Political Theory		Internal Assessment	30	12
	Core Course -2(CC-2)-Political Ideas And Concept	(5+1)=6	Total	100	40
I	Elective(GE-1)	(5+1)=6			
			Semester End	30	14
	AECC-1- Eng. Communication/MIL Communication	2	Internal Assessment	20	06
			Total	50	20
	Core Course -3(CC-3)- Ancient Indian Political Thinkers	(5+1)=6	Semester End	70	28
		(3+1)=0	Internal Assessment	30	12
II	Core Course -4(CC-4)-Modern Indian Political Thinkers	(5+1)=6		100	
		(= 1) =	Total	100	40
	Elective(GE-2)	(5+1)=6			
	AECC-2- Environmental Science	2	Semester End (OMR Sheet)	50	20
	Core Course -5(CC-5)-Introduction to Comparative Politics	(5+1)=6	Semester End	70	28
	Core Course -6(CC-6)-Comparative Government And Politics of Major Constitutions of The World	(5+1)=6			
III			Internal Assessment	30	12
	Core Course -7(CC-7)- Political	(5+1)=6			
	Sociology		Total	100	40
	Elective(GE-3)	(5+1)=6			
	SEC-1- General Knowledge & Current Affairs	2	Semester End (OMR Sheet)	50	20



Semester	Courses	Credits	Examination	marks	Pass marks
	Core Course -8(CC-8)-Western Political Thought	(5+1)=6	Semester End	70	28
	Core Course -9(CC-9)-General Public Administration	(5+1)=6	Internal	30	12
	Core Course -10(CC-10)-Indian Administration	(5+1)=6	Assessment		
IV	Elective(GE-4)	(5+1)=6	_ Total	100	40
			Semester End	30	14
	SEC-2- Personality Development	2	Internal Assessment	20	06
			Total	50	20
	Core Course -11(CC-11)- International Politics	(5+1)=6	Semester End	70	28
	Core Course -12(CC-12)-Constitutional Government of India	(5+1)=6	Internal	30	12
V	Elective(DSE-1A)- National Movement And Constitutional Development In India	(5.4).6	Assessment Total	30	12
	OR International Law	(5+1)=6		100	40
	Elective(DSE-2A)- Political Process In India OR	(5+1)=6			10
	International Organization				
	Core Course -13(CC-13)- Political Ideology	(5+1)=6	Semester End	70	28
VI	Core Course -14(CC-14)-India's Foreign Policy	(5+1)=6	Internal	20	12
	Elective(DSE-3A)- Government & Politics of Jharkhand OR	(5+1)=6	Assessment	30	12
	Foreign Policy of Major Powers		Total	100	40
		(5+1)=6	Project	70	28
	Elective(DSE-4)- Project		Viva	30	12
			Total	100	40

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Total Credit :- 140

Total Marks:-2400

Kolhan University, Chaibasa



Course Content of Political Science Under Choice Based Credit System (CBCS)

B.A.(Programme)

Semester	Courses	Credits	Examination	Full marks	Pass marks
	Core Course- DSE 1A	(5+1=6)	Semester End	70	28
	(Introduction to Political Theory)	(3.1-0)	Internal	30	12
	Core Course- DSE 2A	(5+1=6)	Assessment		
ı	MIL- 1	(5+1=6)	Total	100	40
			Semester End	30	14
	AECC- 1- Eng. Communication/ MIL Communication	2	Internal Assessment	20	06
			Total	50	20
	Core Course- DSE 1A	(F.4.6)	Semester End	70	28
	(Political Ideas And Concept)	(5+1=6)	Internal Assessment	30	12
	Core Course- DSE 2A	(5+1=6)		30	12
II					
	MIL- 1	(5+1=6)	Total	100	40
	AECC- 2- Environmental Science	2	Semester End OMR Sheet	50	20
	Core Course- DSE 1A		Semester End	70	28
III	(Constitutional Government In India)	(5+1=6)	Internal Assessment	30	12
	Core Course- DSE 2A	(5+1=6)	Total	100	40
	MIL- 1	(5+1=6)	Total	100	40
	SEC- 1- General Knowledge & Current Affairs	2	Semester End OMR Sheet	50	20

Semester	Courses	Credits	Examination	Full marks	Pass marks
	Core Course- DSE 1A	(5+1=6)	Semester End	70	728 OHARPI
	(Political Process In India)		Internal	30	12
	Core Course- DSE 2A	(5+1=6)	Assessment	30	
IV	MIL- 1	(5+1=6)	Total	100	40
			Semester End	30	14
	SEC- 2- Personality Development	2	Internal Assessment	20	06
			Total	50	20
	Core Course- DSE 1A	(5+1=6)	Semester End	70	28
	(Western Political Thought)		Internal	30	12
	Core Course- DSE 2A	(5+1=6)	Assessment		
V	GE- 1 National Movement And Constitutional Development In India	(5+1=6)	Total	100	40
			Semester End	30	14
	SEC- 3- History & Culture of Jharkhand	2	Internal Assessment	20	06
			Total	50	20
	Core Course- DSE 1A	(5+1=6)	Semester End	70	28
	(International Politics)		Internal	30	12
	Core Course- DSE 2A	(5+1=6)	Assessment		
VI	GE- 2 Comparative Government And Politics of Major Constitution Of The World	(5+1=6)	Total	100	40
			Semester End	30	14
	SEC- 4-Value Education	2	Internal Assessment	20	06
			Total	50	20

Total Credits:- 120 Total Marks:-2100





Semester I

Core Course I (CC1)Introduction to Political Theory

Course Content

SI. No.	Торіс	Number Classes	of
1	Meaning, Nature, Scope of Political science And Dimension of Politics	10	
2	Liberal and Marxist View of Politics	10	
3	Interdisciplinary Approach to the Study of Political Science – Relation with other social Sciences	10	
4	Nature and Origin of State	10	
5	Functions of the State : Liberalism, Socialism And Welfare State	12	
6	Rise and Growth of Modern state	08	

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

Suggested Readings:

- 1. R. BhargavAnd A. Acharya (Ed.) "Political Theory: An Introduction" Pearson Longman Publication, New Delhi.
- 2. David Marsh, "Theory and Methods In Political Science", Palgrove Mac Millan Publication, New Delhi.
- 3. O.P.Gauba, "RajanitikSiddhant Ki RoopRekha", Mayur Paperbacks Publication, New Delhi
- 4. O.P.Gauba, "SamkalinRajanitikSiddhant", Mayur Paperbacks Publication, New Delhi.
- 5. BalwanGautam(Ed.), "RajanitikSiddhant", Delhi University Press, Delhi.
- 6. Amal Ray AndMohit Bhattacharya, "Political Theory Ideas And Institutions", Jawahar Publisher Delhi.
- 7. E. D. Ashirvatham, "Principle Of Political Theory", S Chand Delhi.

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Semester I

Core Course 2 (CC2) Political Ideas And Concepts

Course Content

SI. No.	Topics	Number of Classes
1	Sovereignty: Monism with special reference to Austin's Views; Pluralism with special reference to Laski and Machiever.	10
2	Equality: Legal, Social, Political and economic Dimensions; Relation between Liberty and Rights.	10
3	Right: Liberal, Marxist and Laski's Theory of Rights	10
4	Justice: Legal, Social, Political and Socio-Economic Dimensions of Justice.	10
5	Liberty: Negative and Positive Nature; Marxist's Concept of Liberty.	10
6	Democracy: Participatory and Representative.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

Suggested Readings:

- 1. R. BhargavAnd A. Acharya (Ed.) "Political Theory: An Introduction" Pearson Longman Publication, New Delhi.
- 2. David Marsh, "Theory and Methods In Political Science", Palgrove Mac Millan Publication, New Delhi.
- 3. O.P.Gauba, "RajanitikSiddhant Ki RoopRekha", Mayur Paperbacks Publication, New Delhi.
- 4. O.P.Gauba, "SamkalinRajanitikSiddhant", Mayur Paperbacks Publication, New Delhi.
- 5. SushilaRamaswami,"Political Theory", PHI Publication, New Delhi.
- 6. Dr. S.P. Verma, "AadhunikRajnitikSiddhant", Vikash Publication New Delhi.
- 7. Dr.Aashirvadam, "RajnitikVigyanKeSiddhant", S. Chand Publication New Delhi.
- 8. Gyan Singh Sandhu(Ed.), "RajanitiSiddhant" Delhi University, Press, Delhi.

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Semester II

Core Course3 (CC3) Ancient Indian Political Thinkers

Course Content

SI. No.	Topics	Number of Classes
1	Ancient Indian Political Thought – Sources of Political Thought.	06
2	Features of Ancient Indian Political Thought.	06
3	Manu: Ideas related to State, Society, Religion And King	12
4	Kautilya: Ideas related to State, Society, Religion And King	12
5	Jainism: Ideas related to State, Society, Religion And King	12
6	Buddhism: Ideas related to State, Society, Religion And King	12

Note:- Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

Suggested Readings:

- 1. RuchiTyagi(Ed.), "PrachinEvam Madhya Kaleen Bharat KaRajnitikChintan", Delhi University Press, Delhi.
- 2. BrijKishorSharma, "Indian Political Thought", Jawahar Publisher, Delhi.
- 3. O. P. Gauba, "BharatiyaRajanitikVicharak" Mayur Paper Backs, Delhi.
- 4. V.P. Verma, "Modern Political Thought" Laxmi Narayan Agrawal Publication, Agra.
- 5. A. Appadorai, "Documents of Political Thought In Modern India", Oxford University Press, Bombay.
- 6. B.R. Nanda, "Gokhale, Gandhi and Nehru: Studies In Indian Nationalism", Allen And Unwin, London.
- 7. Ram RatanAndRuchiTyagi, "Indian Political Thought" Jawahar Publisher, Delhi.

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Semester II

Core Course4 (CC 4) Modern Indian Political Thinkers

Course Content

SI. No.	Topics	Number of Classes
1	Raja Ram Mohan Roy: Ideas related to State, Society, Religion And Polity	10
2	Swami DayanandSaraswati: Ideas related to State, Society, Religion And Polity	10
3	Bal GangadharTilak: Ideas related to State, Society, Religion And Polity	10
4	Swami Vivekanand: Ideas related to State, Society, Religion And Polity	10
5	Mahatma Gandhi: Ideas related to State, Society, Religion And Polity	10
6	Dr. BhimRaoAmbedkar: Ideas related to State, Society, Religion And Polity	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. BrijKishorSharma, "Indian Political Thought", Jawahar Publisher, Delhi.
- 2. O. P. Gauba, "BharatiyaRajanitikVicharak" Mayur Paper Backs, Delhi.
- 3. V.P. Verma, "Modern Political Thought" Laxmi Narayan Agrawal Publication, Agra.
- 4. A. Appadorai, "Documents of Political Thought In Modern India", Oxford University Press, Bombay.
- 5. B.R. Nanda, "Gokhale, Gandhi and Nehru: Studies In Indian Nationalism", Allen And Unwin, London.
- 6. M. P. Awasthi, "BharatiyaRajanitikVicharak",Laxmi Narayan Agrawal Publication, Agra.
- 7. RuchiTyagi(Ed.), "Aadhunik Bharat KaRajnitikChintan: EkVimarsh", Delhi University Press, Delhi.



Semester III

Core Course5 (CC 5) Introduction to Comparative Politics

Course Content

SI. No.	Topics	Number of Classes
1	Comparative Politics: Meaning, Nature And Scope	06
2	Difference between Comparative Politics and Comparative Government.	06
3	Approaches to Study Comparative Politics: Traditional, Political System Analysis, Structural- Functional Analysis And Marxist-Leninist Approach.	14
4	Constitution: Meaning, Type And Evolution.	14
5	Constitutionalism: Liberal-Democratic and Totalitarian	14
6	Pressure Group And Interest Group.	06

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. O. P. Gauba, "TulanatmakRajaniti Ki Roop-Rekha", Mayur Paper Backs, New Delhi.
- 2. J.C. Johari, "TulanatmakRajanit", S. Chand Publication, New Delhi.
- 3. P. D. Sharama, "TulanatmakRajanitikSansathayein".
- 4. J.D. Nagle, "Introduction to Comparative Politics: Political System Performance In three Worlds", Nelson Hall Chicago.
- 5. A. R. Ball And B. Guy Peters, "Modern Politics And Government", Macmillan, London.
- 6. J. C. Johari, "Comparative Political Theory: New Dimensions, Basic Concept and Major Trends", Sterling Publication, New Delhi.
- 7. Asha Gupta, "TulanatmakShasanAurRajniti: SamakaleenPravittiyan", Delhi University Press, Delhi.
- 8. V. N. Khanna, "Comparative Study of Government and Politics", Jawahar Publisher, New Delhi.
- 9. TapanViswal(Ed.), "TulanatmakRajaniti: SansthayenAurPrakriyaen", Orient Blackswain, Hyderabad.



Semester III

Core Course6 (CC 6) Comparative Government and Politics Major Constitutions of the World(U.K. U.S.A. FRANCE AND SWITZERLAND)

Course Content

SI. No.	Topics	Number of Classes
1	Executive System.	15
2	Legislative System.	15
3	Judicial System.	15
4	Procedure of Constitutional Amendments.	05
5	Party System.	05
6	Pressure Group And Interest Group.	05

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. O. P. Gauba, "TulanatmakRajaniti Ki Roop-Rekha", Mayur Paper Backs, New Delhi.
- 2. J.C. Johari, "TulanatmakRajanit", S. Chand Publication, New Delhi.
- 3. P. D. Sharama, "TulanatmakRajanitikSansathayein".
- 4. J.D. Nagle, "Introduction to Comparative Politics: Political System Performance In three Worlds", Nelson Hall Chicago.
- 5. A. R. Ball And B. Guy Peters, "Modern Politics And Government", Macmillan, London.
- 6. J. C. Johari, "Comparative Political Theory: New Dimensions, Basic Concept and Major Trends", Sterling Publication, New delhi.
- 7. J. C. Johari, "Selected World Constitutions", Lotus Press, Delhi.
- 8. A. C. Kapur, "Selected Constitutions", Jawahar Publisher, Delhi.



Semester III

Core Course 7(CC 7)

Political Sociology

Course Content

SI. No.	Topics	Number of Classes
1	Political Sociology: Meaning, Nature And Scope.	10
2	Political Elite.	10
3	Political Culture.	10
4	Political Socialization.	10
5	Political Participation.	10
6	Political Development.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. O. P. Gauba, "TulanatmakRajaniti Ki Roop-Rekha", Mayur Paper Backs, New Delhi.
- 2. Dham Veer, "Political Sociology", Rajasthan Hindi Granth Academy, Jaipur
- 3. Ali Asharaf, "Political Sociology"
- 4. J.C. Johari, "TulanatmakRajanit", S. Chand Publication, New Delhi.
- 5. P. D. Sharama, "TulanatmakRajanitikSansathayein".
- 6. J.D. Nagle, "Introduction to Comparative Politics: Political System Performance In three Worlds", Nelson Hall Chicago.
- 7. Jain AndFariya, "RajanitikSamajShastra", SahityaBhawanPrakashan, Agra.
- 8. A. R. Ball And B. Guy Peters, "Modern Politics And Government", Macmillan, London.
- 9. J. C. Johari, "Comparative Political Theory: New Dimensions, Basic Concept and Major Trends", Sterling Publication, New Delhi.



Semester IV

Core Course 8 (CC 8)

Western Political Thought

Course Content

SI. No.	Topics	Number of Classes
1	Plato: Justice, Education, Communism And Ideal State.	10
2	Aristotle: Nature and Purpose Of State, Slavery, Citizenship And Revolution.	10
3	Hobbes: Social Contract and Sovereignty.	10
4	Locke: Social Contract And Feature of the State.	10
5	Rousseau: Social Contract And General Will.	10
6	J. S. Mill: Liberty, Representative Government.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. SubrataMukharjee&SushilaRamaswami, "A History Of Political Thought Plato to Marx", Jawahar Publisher Delhi.
- 2. PremArora and Brij Grover, "Political Thought Plato to Marx", Jawahar Publisher Delhi.
- 3. J. C. Johari, "Political Thought Modern, Recent and Cotemporary", Jawahar Publisher Delhi.
- 4. Iqabal Narayan, "PratinidhiRajanitikVicharak", Shiv lalagrawal&Company, Agra.
- 5. Michel Foster, "RajanitikChintanKeAadhar", Delhi University, Press, Delhi.
- 6. SubratMukharjeeAndSushilaRamaswami, "PashchatyaRajanitikChintan", Delhi University Press, Delhi.



Semester IV

Core Course 9 (CC 9)

General Public Administration

Course Content

SI. No.	Topics	Number of Classes
1	Public Administration: Meaning, Nature and Scope.	12
2	Approaches to the Study of Public Administration.	12
3	Public And Private Administration.	06
4	Organization: Principles and Bases.	10
5	Financial Administration: Budget And Audit.	10
6	Control Over Administration: Legislative And Judicial.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. SushamaYadav And BalwanGautam, "LokPrashasan: SiddhantEvamVyavahar",OrientBlckswain, Hyderabad.
- 2. RumakiBasu, "LokPrshasan", Jawahar Publication, Delhi.
- 3. M. P. Sharma and B.L. Saana, "LokPrashasan", KitabMahal, delhi.
- 4. Avasthi and Avasthi, "Public administration", Laxmi Narayan Agrawal, Agra.
- 5. L. D. White, "Introduction to the Study of Public administration", S. Chand & Company, New Delhi.
- 6. Vishnu Bhagawan and VidyaBhushan, "A text Book of Public administration", S. Chand & Co. New Delhi.
- 7. Mohit Bhattacharya, "Public Administration and Planning", The World Press Pvt. Ltd., Calctta.
- 8. Mohit Bhattacharya, "New Horizons of Public administration", Jawahar Publisher Delhi.



Semester IV

Core Course 10 (CC 10)Indian Administration

Course Content

SI. No.	Topics	Number of Classes
1	Indian Administration: Development during British Rule.	12
2	Structure Of Administration: Central Secretariat And State Secretariat.	12
3	Union State Relation: Financial And administrative.	12
4	Issues In Administration: Generalist Vs. Specialists, Committed Bureaucracy.	06
5	Redressal of Public Grievances: LokPal and LokAyukta.	06
6	Local Self Government: Rural and Urban.	12

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. Avasthi&Avasthi, "Indian Administration", Laxmi Narayan Agrawal, Agra.
- 2. VudyaBhushan and Vishnu Bhagawan, "Indian Adminstration", S. Chand & Co., New Delhi.
- 3. Padma Ramchandran, "Public administration In India", National Book Trust, India, Delhi.
- 4. B. L. Pharia, "BharatiyaPrashasan", SahityaBhawan Agra.
- 5. B. L. Pharia, "Bharat Main LokPrashasan", SahityaBhawan Agra.
- 6. S. R. Maheswari, "Indian Administration", Laxmi Narayan Agrawal, Agra.



Semester V

Core Course 11 (CC11)

International Politics

Course Content

SI. No.	Topics	Number of Classes
1	International Politics: Definition, Meaning And Nature.	10
2	Relation Between International Politics And International Relation.	10
3	Theories of International Politics: Idealist And Realist.	10
4	National Power And National Interest.	10
5	Balance of Power and Collective security.	10
6	Terrorism: Meaning, Type and Problems.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. K. K. Kulshrestha, "International Relation" S. Chand & Com., Delhi.
- 2. AnveekChatrjee, "World Politics", Pearson Publication, Delhi.
- 3. Joshua S. Gold Stone & J.C. Chatterjee, "International Relation", Pearson Publication, Delhi.
- 4. Palmer And Perkin, "International Relation".
- 5. B. L. haria& K. Pheria, "AntarrashtriyaRajiniti", Sahitya Bhawan Agra.
- 6. S. C. Singhal "AntarrashtriyaRajiniti", Laxmi Narayan Agrawal, Agra.
- 7. B. L. Pharia, "AntarashtriyaSambandh", SahityaBhawan, Agra.
- 8. S. C. Singhal, "AntarashtriyaSambandh", Laxmi Narayan Agrawal, Agra.



Semester V

Core Course 12 (CC12) Constitutional Government In India

Course Content

SI. No.	Topics	Number of Classes
1	Socio- Economic Bases And Philosophy of The Indian Constitution.	10
2	The Constitution: Preamble and Basic Features.	10
3	Fundamental Rights And Directive Principles Of State Policy.	10
4	Union Government: Legislature And Executive.	10
5	State Government: Legislature And Executive.	10
6	Judiciary: Supreme Court and Judicial Activism.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. B. N. Chawdhari&Yuvaraj Kumar, "Bharat main SanvadhanikLoktntraAurShasan", Delhi University Press, Delhi.
- 2. SubhashKashyap, "SansadiyaLoktantrakaItihas", Delhi University Press, Delhi.
- 3. SubhashKashyap, "BharatiyaSansad: SamasyainAurSamadhan",Delhi University Press, Delhi.
- 4. A. P. Avasthi, "Indian Government And Politics", Laxmi Narayan Agrawal, Agra.
- 5. S. C. Singhal, "BharatiyaShasanAurRajiniti", Laxmi Narayan Agrawal, Agra.
- 6. B. L. Phariya, "BharatiyaShasanAurRajiniti, SahityaBhawan, Agra.
- 7. A. R. Khan, "The Constitution Of India", Access Publishing Delhi.
- 8. A. S. Narang, "Indian Political System, Process And Development", Gitanjali Publishing House, Delhi.
- 9. M. V. Payalee, "An Introduction To The Constitution Of India", Jawahar Publisher, Delhi.



Semester V

DSE 1A National Movement And Constitutional Development In India Course Content

SI. No.	Topics	Number of Classes
1	Indian National Congress: Birth, Role and Policies.	10
2	Extremists And moderates- Methods And Ideologies of Movements.	10
3	The Mont Ford Reforms 1919.	10
4	The Government of India Act 1935.	10
5	Mountbatten Plan And Partition of India.	10
6	Independence of India Act 1947.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. Ram Chand Pradhan, "Raj Se Swaraj (Bharat Main UpaniveshvadAurRashtravad)", delhi University Press, Delhi.
- 2. Subhash Kashyap, "Bharat KaSanvidhanikVikasAurSanvidhan", Delhi University Press, Delhi.
- 3. Satya M. Roy, "Bharat Main UpaniveshvadAurRashtravad", Delhi University Press, Delhi
- 4. HimanshuRoy(Ed.), "Bharat Main UpaniveshvadAurRashtravad", Delhi University Press. Delhi.
- 5. L. P. Sharma, "Indian National Movement And Constitutional Development", Laxmi Narayan Agrawal Agra.
- 6. S. C. Singhal, "BharatiyaRashtriya AndolanAurBharatiyaGanatantraKaVikas",Laxmi Narayan Agrawal Agra.
- 7. Bimal Prasad, "The Making Of India", Vitasta Publication, Delhi.



Semester V

DSE 1B International Law

Course Content

SI. No.	Topics	Number Classes	of
1	International Law: Origin And Development.	10	
2	International Law: Sources.	10	
3	International Law: Codification.	10	
4	Recognition: State And Government.	10	
5	Extradition And Intervention.	10	
6	Contraband And Blockade.	10	

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

Suggested Readings:

- 1. S.C. Singhal, "AntarrashtriyaKanoon", Laxmi Narayan Agrawal, Agra.
- 2. B. L. Phariya, "AntarashtriyaSangathanEvamAntarashtriyaKanoon", SahityaBhawan, Agra.
- 3. B. L. Phariya, "AntarashtriyaKanoon", SahityaBhawan, Agra.
- 4. A. C. Kapoor, "International Law"
- 5. Hingorani, "International Law"

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Semester V

DSE 2A Political Process In India

Course Content

SI. No.	Topics	Number of Classes
1	Political Parties And Party System.	10
2	Voting Behaviour In India: Nature and Determinants (Casteism And Regionalism).	10
3	Pressure Groups And Interest Groups.	10
4	Religion And Politics: Debate on Secularism.	10
5	Defection.	10
6	Co-operative Federalism.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. Vivekkumar, "Caste And Democracy In India", Gyan Publishing House Delhi.
- 2. PravinkumarJha, 'Indian Politics In Comparative Perspective", Prearson Publication, Delhi.
- 3. A.S. Narang, "Indian Political System, Process and Development", Gitanjali Publishing House, Delhi.
- 4. Bimal Prasad, "the Making of India", Vitasta Publication, Delhi.
- 5. Paul R. Brass, "The politics of India Since Independence", Jawahar Publisher Delhi.
- 6. Ravindra Kumar, "Dalit Exclusion and Subordination", Rawat Publication, Delhi.
- 7. PrakashChander, "Indian Government And Politics", Jawahar publisher, Delhi.
- 8. Mahendra P. Singh&HimanshuRoy(Ed.), "BharatiyaRainikitPranaliSanrachnaAurVikas", Delhi University Publication, Delhi.
- 9. Pukharaj Jain, "BharatiyaRashtriyaAndolanEvamBharatiyaSanvidhan", SahityaBhawan, Agra.



Semester V

DSE 2B

International Organization

Course Content

SI. No.	Topics	Number of Classes
1	International Organization: Evolution And Nature.	10
2	The United Nations: Structure, Nature and Functions.	10
3	Agencies Of UNO: WHO, UNESCO And UNICEF.	10
4	UNO: Role In Peace Making In the World.	10
5	UNO: Politics of Restructuring.	10
6	EU, OPEC And G-8	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. P. Pant, "AntarrashtriyaSangathan", Jawahar Publisher Delhi.
- 2. Nina Shishir,"SanyuktaRashtraSangh: SaiddhantikEvamVyavaharikPaksh", Delhi University Press, Delhi.
- 3. B. L. Phariya, "AntarashtriyaSangathanEvamAntarashtriyaKanoon", SahityaBhawan, Agra.
- 4. B. L. Phariya, "AntarashtriyaSangathan", SahityaBhawan, Agra.



Semester VI

Core Course13 (CC13) Political Ideology

Course Content

SI. No.	Topics	Number of Classes
1	Political Ideology: Meaning And Scope.	10
2	Liberalism And Neo-Liberalism.	10
3	Communism And Marxism.	10
4	Democratic Socialism.	10
5	Fascism And Nazism.	10
6	Gandhism.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. B. L. Phariya, "SamkalinRajinitikMudde", SahityaBhawan, Agra.
- 2. S. C. Singhal, "SamkalinRajinitikMudde", Laxmi Narayan Agrawal, Agra.
- 3. S. C. Singhal, "RajinitikVichardharain", Laxmi Narayan Agrawal, Agra.
- 4. Ram Chandra Gupt, "AadhunikRajnitikVichardharaein", MacMillan Delhi.
- 5. C. L. Wayper, "Teach Yourself Political Thought", Jawahar Publisher, Delhi.
- 6. Roger Eatwell& Wright, "Book On Contemporary Political Ideology", Rawat Publication, Delhi.



Semester VI

Core Course 14 (CC14)

India's Foreign Policy

Course Content

SI. No.	Topics	Number Classes	of
1	Basic Features of Indian Foreign Policy.	10	
2	Non-Alignment: Meaning And Relevance.	10	
3	Relations With Regional Organization: SAARC And ASEAN.	12	
4	India And Its Neighbour: China, Pakistan And Nepal.	12	
5	India And Major Powers: U.S. And Russia.	12	
6	Determinants of India' Foreign Policy.	04	

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. B. P. Datt, "BadalatiDuniya Main Bharat Ki VideshNiti", Delhi University Press, Delhi.
- 2. J. N. Dikshit, BharatiyaVideshNiti", PrabhatPrakasnan, Delhi.
- 3. P. D. Kaushik, "AntarrashtriyaSambandh", KalyaniPrakashan, Delhi.
- 4. PremArora, "Foreign Policy Of India", Cosmos Bookhive, delhi.
- 5. SumitGanguli, "India's Foreign Policy: Retrospect's And Prospect", Jawahar Publisher, Delhi.
- 6. BiswarajanMohanty, "Foreign Policy Of India In 21st Century" New Century Publication, Delhi.
- 7. PremArora, "Indian Foreign Policy", Jawahar Publisher, delhi.
- 8. Jamil Ahmad &DastgirAlam, "WTO, India And Regionalism In The World", Jawahar Publisher, Delhi.
- 9. ArunodayBajpai, "SamkalinVishvaEvam Bharat", Pearson Publication. Delhi.
- 10. B. P. Gautam, "India's Foreign Policy", Mayur Paper Backs, Delhi.



Semester VI

DSE 3A Government And Politics Of Jharkhand

Course Content

SI. No.	Topics	Number of Classes
1	Jharkhand: Demography and Culture.	10
2	Jharkhand Movement: Causes, Nature And Ideology.	10
3	Socio-Economic Determinants of Politics of Jharkhand.	10
4	Major Issues in The Politics of Jharkhand: Tribal and Naxal Movement.	10
5	Working Of Government From Coalition to Single Party.	10
6	Emerging Trends In State Politics of Jharkhand.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. P. Chaterjee(Ed.), "State And Politics In India", Oxford University Press.
- 2. Praveen Kumar Jha, "Indian Politics In Comparative Perspective", Pearson Publication, Delhi.
- 3. B. L. Pharia, "Rajyon Ki Rajiniti", SahityaBhawan, Agra.
- 4. O. P. Panvare, "GathbandhanSarakareinEvamRastrapati Ki Bhumika", Gyan Publication House Delhi.
- 5. Sunil Kumar Singh, "Inside Jharkhand", Crown Publication, Ranchi.





Semester VI

DSE 3B Foreign Policy of Major Powers

Course Content

SI. No.	Topics	Number of Classes
1	Foreign Policy: Meaning And Determinants.	06
2	Major Powers: Meaning And Determinants.	06
3	Major Issues in Foreign Policy of U.S. in Post- Cold War Era.	12
4	Major Issues in Foreign Policy of France in Post- Cold War Era.	12
5	Major Issues in Foreign Policy of Russia in Post- Cold War Era.	12
6	Major Issues in Foreign Policy of China in Post- Cold War Era.	12

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. RahatHasan, "Foreign Policy And Strategic Issue", New Century, Publication, Delhi.
- 2. P. D. Kaushik, "AntarrashtriyaSambandh", KalyaniPrakashan, Delhi.
- 3. ManoranjanMohanty, "ChiniKranti", Delhi University Press, Delhi.
- 4. John Dumbrell, "American Foreign Policy: Carter To Clinton", Hounsmill, Macmillan University Press.
- 5. Chan Gerald, "Chinese Perspective On International Relation", Hounsmill, Macmillan University Press.
- 6. Kanet Roger E. & A. V. Kozhemiakin, "The Foreign Policy of Russian Federation", Hounsmill, Macmillan University Press.



Semester VI

DSE 4 (Project)

Project Work

The Project Work has to be completed by every student on the Topic based on optional paper with the consultation of the guide/ supervisor.

This paper has 100 marks of 6 credits. The evaluation of project work is done on the basis of external examination.

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B. A. (Hons)

Political Science

Elective Courses

Semester I

General Elective I (GE 1) Introduction to Political Theory

Course Content

SI. No.	Topic	Number Classes	of
1	Meaning, Nature, Scope of Political science And Dimension of Politics	10	
2	Liberal and Marxist View of Politics	10	
3	Interdisciplinary Approach to the Study of Political Science – Relation with other social Sciences	10	
4	Nature and Origin of State	10	
5	Functions of the State : Liberalism, Socialism And Welfare State	12	
6	Rise and Growth of Modern state	08	

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 8. R. BhargavAnd A. Acharya (Ed.) "Political Theory: An Introduction" Pearson Longman Publication, New Delhi.
- 9. David Marsh, "Theory and Methods In Political Science", Palgrove Mac Millan Publication, New Delhi.
- 10. O.P.Gauba, "RajanitikSiddhant Ki RoopRekha", Mayur Paperbacks Publication, New Delhi.
- 11. O.P.Gauba, "SamkalinRajanitikSiddhant", Mayur Paperbacks Publication, New Delhi.
- 12. BalwanGautam(Ed.), "RajanitikSiddhant", Delhi University Press, Delhi.
- 13. Amal Ray AndMohit Bhattacharya, "Political Theory Ideas And Institutions", Jawahar Publisher Delhi.
- 14. E. D. Ashirvatham, "Principle Of Political Theory", S Chand Delhi.



ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPLIR, W SINGHRHUM



B. A. (Hons)

Political Science

Elective Courses

Semester II

General Elective 2 (GE2) Political Ideas And Concepts

Course Content

SI. No.	Topics	Number of Classes
1	Sovereignty: Monism with special reference to Austin's Views; Pluralism with special reference to Laski and Machiever.	10
2	Equality: Legal, Social, Political and economic Dimensions; Relation between Liberty and Rights.	10
3	Right: Liberal, Marxist and Laski's Theory of Rights	10
4	Justice: Legal, Social, Political and Socio-Economic Dimensions of Justice.	10
5	Liberty: Negative and Positive Nature; Marxist's Concept of Liberty.	10
6	Democracy: Participatory and Representative.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 9. R. BhargavAnd A. Acharya (Ed.) "Political Theory: An Introduction" Pearson Longman Publication, New Delhi.
- 10. David Marsh, "Theory and Methods In Political Science", Palgrove Mac Millan Publication, New Delhi.
- 11. O.P.Gauba, "RajanitikSiddhant Ki RoopRekha", Mayur Paperbacks Publication, New Delhi.
- 12. O.P.Gauba, "SamkalinRajanitikSiddhant", Mayur Paperbacks Publication, New Delhi.
- 13. SushilaRamaswami,"Political Theory", PHI Publication, New Delhi.
- 14. Dr. S.P. Verma, "AadhunikRajnitikSiddhant", Vikash Publication New Delhi.
- 15. Dr. Aashirvadam, "Rajnitik Vigyan Ke Siddhant", S. Chand Publication New Delhi.
- 16. Gyan Singh Sandhu(Ed.), "RajanitiSiddhant" Delhi University, Press, Delhi.



ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPLIR, W SINGHRHUM

B. A. (Hons)

Political Science

Elective courses





Course Content

SI. No.	Topics	Number of Classes
1	Socio- Economic Bases And Philosophy of The Indian Constitution.	10
2	The Constitution: Preamble and Basic Features.	10
3	Fundamental Rights And Directive Principles Of State Policy.	10
4	Union Government: Legislature And Executive.	10
5	State Government: Legislature And Executive.	10
6	Judiciary: Supreme Court and Judicial Activism.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

Suggested Readings:

- 1. B. N. Chawdhari&Yuvaraj Kumar, "Bharat main SanvadhanikLoktntraAurShasan", Delhi University Press, Delhi.
- 2. SubhashKashyap, "SansadiyaLoktantrakaItihas", Delhi University Press, Delhi.
- 3. SubhashKashyap, "BharatiyaSansad: SamasyainAurSamadhan", Delhi University Press, Delhi.
- 4. A. P. Avasthi, "Indian Government And Politics", Laxmi Narayan Agrawal, Agra.
- 5. S. C. Singhal, "BharatiyaShasanAurRajiniti", Laxmi Narayan Agrawal, Agra.
- 6. B. L. Phariya, "BharatiyaShasanAurRajiniti, SahityaBhawan, Agra.
- 7. A. R. Khan, "The Constitution Of India", Access Publishing Delhi.
- 8. A. S. Narang, "Indian Political System, Process And Development", Gitanjali Publishing House, Delhi.
- 9. M. V. Payalee, "An Introduction To The Constitution Of India", Jawahar Publisher, Delhi.

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUN



B. A. (Hons)

Political Science

Elective Courses

Semester IV

General Elective (GE 4)

Political Process In India

Course Content

SI. No.	Topics	Number of Classes
1	Political Parties And Party System.	10
2	Voting Behaviour In India: Nature and Determinants (Casteism And Regionalism).	10
3	Pressure Groups And Interest Groups.	10
4	Religion And Politics: Debate on Secularism.	10
5	Defection.	10
6	Co-operative Federalism.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. Vivekkumar, "Caste And Democracy In India", Gyan Publishing House Delhi.
- 2. PravinkumarJha, 'Indian Politics In Comparative Perspective", Prearson Publication, Delhi.
- 3. A.S. Narang, "Indian Political System, Process and Development", Gitanjali Publishing House, Delhi.
- 4. Bimal Prasad, "the Making of India", Vitasta Publication, Delhi.
- 5. Paul R. Brass, "The politics of India Since Independence", Jawahar Publisher Delhi.
- 6. Ravindra Kumar, "Dalit Exclusion and Subordination", Rawat Publication, Delhi.
- 7. PrakashChander, "Indian Government And Politics", Jawahar publisher, Delhi.
- 8. Mahendra P. Singh&HimanshuRoy(Ed.), "BharatiyaRainikitPranaliSanrachnaAurVikas", Delhi University Publication, Delhi.
- 9. Pukharaj Jain, "BharatiyaRashtriyaAndolanEvamBharatiyaSanvidhan", SahityaBhawan, Agra.



Semester I

DSE 1A Introduction to Political Theory

Course Content

SI. No.	Topics	Number of Classes
1	Meaning, Nature, Scope of Political science And Dimension of Politics	10
2	Liberal and Marxist View of Politics	10
3	Interdisciplinary Approach to the Study of Political Science – Relation with other social Sciences	10
4	Nature and Origin of State	10
5	Functions of the State : Liberalism, Socialism And Welfare State	12
6	Rise and Growth of Modern state	08

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. R. BhargavAnd A. Acharya (Ed.) "Political Theory: An Introduction" Pearson Longman Publication, New Delhi.
- 2. David Marsh, "Theory and Methods In Political Science", Palgrove Mac Millan Publication, New Delhi.
- 3. O.P.Gauba, "RajanitikSiddhant Ki RoopRekha", Mayur Paperbacks Publication, New Delhi.
- 4. O.P.Gauba, "SamkalinRajanitikSiddhant", Mayur Paperbacks Publication, New Delhi.



Semester II

DSE 1B Political Ideas And Concepts

Course Content

SI. No.	Topics	Number Classes	of
1	Sovereignty: Monism with special reference to Austin's Views; Pluralism with special reference to Laski and Machiever.	10	
2	Equality: Legal, Social, Political and economic Dimensions; Relation between Liberty and Rights.	10	
3	Right: Liberal, Marxist and Laski's Theory of Rights	10	
4	Justice: Legal, Social, Political and Socio-Economic Dimensions of Justice.	10	
5	Liberty: Negative and Positive Nature; Marxist's Concept of Liberty.	10	
6	Democracy: Participatory and Representative.	10	

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

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- 2. David Marsh, "Theory and Methods In Political Science", Palgrove Mac Millan Publication, New Delhi.
- 3. O.P.Gaba, "RajanitikSiddhant Ki RoopRekha", Mayur Paperbacks Publication, New Delhi.
- 4. O.P.Gaba, "SamkalinRajanitikSiddhant", Mayur Paperbacks Publication, New Delhi.
- 5. SushilaRamaswami,"Political Theory", PHI Publication, New Delhi.
- 6. Dr. S.P. Verma, "AadhunikRajnitikSiddhant", Vikash Publication New Delhi.
- 7. Dr. Aashirvadam, "RajnitikVigyanKeSiddhant", S. Chand Publication New Delhi.
- 8. Gyan Singh Sandhu(Ed.), "RajanitiSiddhant" Delhi University, Press, Delhi.



Semester III

DSE 1C Constitutional Government In India

Course Content

SI. No.	Topics	Number Classes	of
1	Socio- Economic Bases And Philosophy of The Indian Constitution.	10	
2	The Constitution: Preamble and Basic Features.	10	
3	Fundamental Rights And Directive Principles Of State Policy.	10	
4	Union Government: Legislature And Executive.	10	
5	State Government: Legislature And Executive.	10	
6	Judiciary: Supreme Court and Judicial Activism.	10	

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

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- 2. SubhashKashyap, "SansadiyaLoktantrakaItihas", Delhi University Press, Delhi.
- 3. SubhashKashyap, "BharatiyaSansad: SamasyainAurSamadhan",Delhi University Press, Delhi.
- 4. A. P. Avasthi, "Indian Government And Politics", Laxmi Narayan Agrawal, Agra.
- 5. S. C. Singhal, "BharatiyaShasanAurRajiniti", Laxmi Narayan Agrawal, Agra.
- 6. B. L. Phariya, "BharatiyaShasanAurRajiniti, SahityaBhawan, Agra.
- 7. A. R. Khan, "The Constitution of India", Access Publishing Delhi.
- 8. A. S. Narang, "Indian Political System, Process And Development", Gitanjali Publishing House, Delhi.
- 9. M. V. Payalee, "An Introduction To The Constitution Of India", Jawahar Publisher, Delhi.



Semester IV

DSE 1D Political Process In India

Course Content

SI. No.	Topics	Number of Classes
1	Political Parties And Party System.	10
2	Voting Behaviour In India: Nature and Determinants(Casteism And Regionalism).	10
3	Pressure Groups And Interest Groups.	10
4	Religion And Politics: Debate on Secularism.	10
5	Defection.	10
6	Co-operative Federalism.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. Vivekkumar, "Caste And Democracy In India", Gyan Publishing House Delhi.
- 2. PravinkumarJha, 'Indian Politics In Comparative Perspective", Pearson Publication, Delhi.
- 3. A.S. Narang, "Indian Political System, Process and Development", Gitanjali Publishing House, Delhi.
- 4. Bimal Prasad, "the Making of India", Vitasta Publication, Delhi.
- 5. Paul R. Brass, "The politics of India Since Independence", Jawahar Publisher Delhi.
- 6. Ravindra Kumar, "Dalit Exclusion and Subordination", Rawat Publication, Delhi.
- 7. PrakashChander, "Indian Government And Politics", Jawahar publisher, Delhi.
- Mahendra P. Singh&HimanshuRoy(Ed.),
 BharatiyaRainikitPranaliSanrachnaAurVikas", Delhi University Publication, Delhi.
- 9. Pukharaj Jain, "BharatiyaRashtriyaAndolanEvamBharatiyaSanvidhan", SahityaBhawan, Agra.



Semester V

DSE 1E Western Political Thought

Course Content

SI. No.	Topics	Number Classes	of
1	Plato: Justice, Education, Communism And Ideal State.	10	
2	Aristotle: Nature and Purpose Of State, Slavery, Citizenship And Revolution.	10	
3	Hobbes: Social Contract and Sovereignty.	10	
4	Locke: Social Contract And Feature of the State.	10	
5	Rousseau: Social Contract And General Will.	10	
6	J. S. Mill: Liberty, Representative Government.	10	

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. SubrataMukharjee&SushilaRamaswami, "A History Of Political Thought Plato to Marx", Jawahar Publisher Delhi.
- 2. PremArora and Brij Grover, "Political Thought Plato to Marx", Jawahar Publisher Delhi.
- 3. J. C. Johari, "Political Thought Modern, Recent and Cotemporary", Jawahar Publisher Delhi.
- 4. Iqabal Narayan, "PratinidhiRajanitikVicharak", Shiv lalagrawal& Company, Agra.
- 5. Michel Foster, "RajanitikChintanKeAadhar", Delhi University, Press, Delhi.
- 6. SubratMukharjeeAndSushilaRamaswami, "PashchatyaRajanitikChintan", Delhi University Press, Delhi.

Semester V

GE 1 National Movement And Constitutional Development In India

Course Content

SI. No.	Topics	Number of Classes
1	Indian National Congress: Birth, Role and Policies.	10
2	Extremists And moderates- Methods And Ideologies of Movements.	10
3	The Mont Ford Reforms 1919.	10
4	The Government of India Act 1935.	10
5	Mountbatten Plan And Partition of India.	10
6	Independence of India Act 1947.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. Ram Chand Pradhan, "Raj Se Swaraj (Bharat Main UpaniveshvadAurRashtravad)", delhi University Press, Delhi.
- 2. Subhash Kashyap, "Bharat KaSanvidhanikVikasAurSanvidhan", Delhi University Press, Delhi.
- 3. Satya M. Roy, "Bharat Main UpaniveshvadAurRashtravad", Delhi University Press, Delhi.
- 4. HimanshuRoy(Ed.), "Bharat Main UpaniveshvadAurRashtravad", Delhi University Press, Delhi.
- 5. L. P. Sharma, "Indian National Movement And Constitutional Development", Laxmi Narayan Agrawal Agra.
- 6. S. C. Singhal, "BharatiyaRashtriya AndolanAurBharatiyaGanatantraKaVikas",Laxmi Narayan Agrawal Agra.
- 7. Bimal Prasad, "The Making Of India", Vitasta Publication, Delhi.



B. A. (Programme) Political Science Semester VI

DSE 1F International Politics

Course Content

SI. No.	Topics	Number of Classes
1	International Politics: Definition, Meaning And Nature.	10
2	Relation Between International Politics And International Relation.	10
3	Theories of International Politics: Idealist And Realist.	10
4	National Power And National Interest.	10
5	Balance of Power and Collective security.	10
6	Terrorism: Meaning, Type and Problems.	10

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. K. K. Kulshrestha, "International Relation" S. Chand & Com., Delhi.
- 2. AnveekChatrjee, "World Politics", Pearson Publication, Delhi.
- 3. Joshua S. Gold Stone & J.C. Chatterjee, "International Relation", Pearson Publication, Delhi.
- 4. Palmer And Perkin, "InternationalRelation".
- 5. B. L. haria& K. Pheria, "AntarrashriyaRajinit", Sahitya Bhawan Agra.
- 6. S. C. Singhal "AntarrashtriyaRajiniti", Lxmi Narayan Agrawal, Agra.
- 7. B. L. Pharia, "AntarashrtiyaSambandh", SahityaBhawan, Agra.
- 8. S. C. Singhal, "AntarashrtiyaSambandh", Laxmi Narayan Agrawal, Agra.

Semester VI

General Elective 2 (GE 2) Comparative Government and Politics Major Constitutions of the World(U.K. U.S.A. FRANCE AND SWITZERLAND)

Course Content

SI. No.	Topics	Number of Classes
1	Executive System.	15
2	Legislative System.	15
3	Judicial System.	15
4	Procedure of Constitutional Amendments.	05
5	Party System.	05
6	Pressure Group And Interest Group.	05

Note:-Ten Objective Type Questions of Two Marks Each(10x2=20); Eight Short Answer Type Questions, of Which 4 have to be Answered for 5 Marks Each(4x5=20); 4 Questions of Long Answer Type, of Which 2 have to be Answered for 15 Marks Each(2x15=30).

- 1. O. P. Gauba, "TulanatmakRajaniti Ki Roop-Rekha", Mayur Paper Backs, New Delhi.
- 2. J.C. Johari, "TulanatmakRajanit", S. Chand Publication, New Delhi.
- 3. P. D. Sharama, "TulanatmakRajanitikSansathayein".
- 4. J.D. Nagle, "Introduction to Comparative Politics: Political System Performance In three Worlds", Nelson Hall Chicago.
- 5. A. R. Ball And B. Guy Peters, "Modern Politics And Government", Macmillan, London.
- 6. J. C. Johari, "Comparative Political Theory: New Dimensions, Basic Concept and Major Trends", Sterling Publication, New delhi.
- 7. J. C. Johari, "Selected World Constitutions", Lotus Press, Delhi.
- 8. A. C. Kapur, "Selected Constitutions", Jawahar Publisher, Delhi.

KolhanUniversity, Chaibasa





Syllabus

For

B.A (Honours) and B.A Sociology Programme UNDER CHOICE BASED CREDIT SYSTEM (CBCS) 2017

UNIVERSITY DEPARTMENT OF SOCIOLOGY KOLHAN UNIVERSITY, CHAIBASA





Members of Board of Studies of CBCS Under-Graduate Syllabus as per Guidelines of the KOLHAN UNIVERSITY, CHAIBASA

Chairman –Prof. S.K. Singh (Head,	University Department of Sociology, KOLHAN UNIVERSITY,
CHAIBASA)	

2. ExternalMembers:

- I. Dr. Prabhat Kumar Singh (Associate Professor & Head University of Sociology, Ranchi University, Ranchi}
- II. Dr. Surendra Pandey (Associate Professor, University Department of Sociology, Ranchi University, Ranchi)



ABOUT CHOICE BASED CRIDET SYSTEM (CBCS)

Outline of Choice Based Credit System:

- **1. Core Course:** A course, which should compulsorily be studies by a candidate as a core requirement is termed as a core course.
- **2. Elective Course:** Generally a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/subject of study or which provides an extended scope or which enables an exposure to some other discipline/subject/ domain or nutures the candidate's proficiency/skill is called an Elective course.
- **2.1 Discipline Specific Elective (DSE) Course:** Elective Courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. The university/institute may also offer discipline related Elective courses of interdisciplinary nature (to be offered by main discipline/subject of study).
- **2.2 Dissertation/Project:** An elective course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a candidate studies such a course on his own with an advisory support by a teacher/faculty member is called dissertation/project.
- **2.3 Generic Elective (GE) course:** An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic elective
- P.S.:A core course offered in a discipline / subject may be treated as an elective by other discipline /subject and vice versa and such electives mayalso be referred to as Generic Elective.
- **3. Ability Enhancement Course(AEC):** The Ability Enhancement (AE) Courses may be of two kinds: Ability Enhancement compulsory Courses (AECC) and skill enhancement courses (SEC). "AECC" courses are the courses based upon the content that leads to knowledge enhancement; i.Environmental Science andii.English/MIL Communication. These are mandatory for all discipline. SEC courses are value-based and/or skill -based and are aimed at providing hands -on- training, competencies, skill, etc.



- **3.1 Ability Enhancement CompulsoryCourse (AECC):** Environmental Science, English Communication/MIL Communication.
- 3.2 Skill enhancement course (SEC): These courses may be chosen from a pool of courses designed to provide value-based and /or skill-based knowledge.

*Introducing Research component in Under-Graduate Courses Project work/Dissertation is considered as a special course involving application of knowledge in solving /analysing/exploring a real life situation/difficult problem. A Project/Dissertation work be of 6 credits. A projects/Dissertation work may be given in lieu of a discipline specific elective paper.

Implementation:

- 1. The CBCS may be implemented in a central/ state Universities subject to the condition that all the stakeholders agree to common minimum syllabi of the core paper and at least follow common minimum curriculum as fixed by the UGC. The allowed deviation from the syllabi being 20% at the maximum.
- 2. The universities may be allowed to finally design their own syllabi for the core and elective papers subjects to point no. 1. UGC may prepare a list of elective papers but the universities may further add to the list of elective papers they want to offer as per the facilities available.
- 3. Number of core papers for all universities has to be same for both UG honours as well as UG program.
- 4. Credit score earned by a student for any elective paper has to be included in the student's overall score tally irrespective of whether the paper is offered by the parent university (degree awarding university/institute) or not.
- 5. For the introduction of AE courses, they may be divided into two categories: A) AE compulsory course: the universities participating in CBCS system may have common curriculum for these papers. There may be one paper each in the 1st two semesters vice (I) English/MIL communication, (II) environmental science.



- B) Skill enhancement course: the universities may decide the papers they may want to offer from a common pool of papers decided by UGC or the universities may choose such papers themselves in addition to the list suggested by UGC. The universities may offer one paper per semester for these courses.
- 6. The university/ institute may plan the number of seats per elective paper as per the facility and infrastructure available.
- 7. An undergraduate degree with Honours in a discipline may be awarded if a student complete 14 core papers in that discipline, 2 Ability Enhancement Compulsory Course (AECC), minimum 2 Skill enhancement course (SEC) and 4 papers each from a list of Discipline specific Elective and generic elective papers respectively.
- 8. An undergraduate program degree in science disciplines may be awarded if a student completes 4 core papers each in three disciplines of choice, 2 Ability Enhancement Compulsory Course (AECC), 4 Skill enhancement course (SEC) and 2 papers each from a list of discipline specific elective papers based on three disciplines of choice selected above, respectively.
- 9. An undergraduate program degree in Humanities/ social sciences/ commerce may be awarded if a student complete 4 core papers each in two disciplines of choice, 2 core papers each in English and MIL respectively, 2 Ability Enhancement Compulsory Course (AECC), 4 Skill enhancement course (SEC), 2 papers each from a list of discipline specific elective papers based on the two disciplines of choice selected above, respectively, and two papers from the list of generic elective papers.
- 10. The credit(S) for each theory paper/practical/tutorial/project/dissertation will be as per the details given in A,B,C,D for B.SC Honours, B.A/B.COM Honours, B.SC program and B.A/B.COM program, respectively
- 11. Wherever a university requires that an applicant for a particular M.A/M.SC/Technical/professional course should have studied a specific discipline at the undergraduate level, it is suggested that obtaining 24 credits in the concerned discipline at the undergraduate level may be deemed sufficient to specify such a requirement for admission to the M.A/M.SC/Technical/professional course.



Details of courses under B.A (Honours)

Course *credits

Theory + practical + tutorial

I. Core course 14X4= 56 14X5= 70

(14 PAPERS)

II. Core course practical/tutorial*

(14 papers) 14X2= 28 14X1= 14

Elective course

(8 paper)

A.1. Discipline specific elective 4X4= 16 4X5= 20

(4 papers)

A.2. Discipline specific elective practical/tutorials* 4X2= 8 4X1= 4

(4 papers)

B.1. Generic Elective / interdisciplinary 4X4= 16 4X5= 20

(4 papers)

B.2. Generic Elective Elective practical/ tutorials* 4X2= 8 4X1= 4

(4 papers)

Optional dissertation or project work in place of one discipline specific elective

Paper (6 credits) in 6th semester

III. Ability enhancement course

1 Ability enhancement compulsory 2X2 =4 2X2=4

(2 papers of 2 credits each)

Environmental science English communication/ MIL

2 Ability enhancement ELECTIVE (skill based)

(Minimum 2, max. 4) 2X2=4 2X2=4

(2 papers of 2 credits each)

Total credits = 140 total credits 140

Institute should involve a system /policy about ECA/ General interest/hobby/sports/ NCC/NSS/ related course on its own.

*wherever there is a practical there will be no tutorial and vice-versa.

11

*wherever there is a practical there will be no tutorial and vice-versa.





B.A (HONOURSE) SOCIOLOGY UNDER CBCS

CONTENTS

S. NO.	NAME OF THE COURSE		
C 01	Introduction of Sociology		
C 02	Indian Society and Change		
C 03	Social Research and Methods		
C 04	Pioneers of Social Thinkers		
C 05	Social problems in India		
C 06	Urban Sociology		
C 07	Rural Sociology		
C 08	Sociology of Tribes		
C 09	Industrial Sociology		
C 10	Social Anthropology		
C 11	Indian Social Thinkers		
C 12	Sociology of Development and Change		
C 13	Labour and Social Welfare		
C 14	Social Psychology		
	Discipline Specific Elective (DSE)		
DSC 01	Sociology of Religion		
DSC 02	Social Movements in India		
DSC 03	Globalisation and Society		
DSC 04	Field Work and Dissertation		



SEMESTER	SERIAL	PAPER	CONTENT	
I.	1.1	Ability Enhancement (AE)Compulsory	Language-MIL/ENGLISH	
	1.2	Core discipline -1	Introduction of Sociology	
	1.3	Core disciplinine-2	Indian Society and Change	
	1.4	Generic Elective- 1	Basic Mathematics	
		(interdisciplinary)		
II.	2.1	Ability Enhancement Compulsory Course (AECC)	MIL/ENGLISH	
	2.2	Core discipline -3	Social Research and Methods	
	2.3	Core discipline -4	Pioneers of Social Thinkers	
	2.4	Generic Elective-2 (interdisciplinary)	Computer Application	
III.	3.1	Core discipline -5	Social problems in India	
	3.2	Core discipline -6	Urban Sociology	
	3.3	Core discipline -7	Rural Sociology	
	3.4	Generic Elective-3 (interdisciplinary)	History and Culture of Jharkhand	
	3.5	Ability Enhancement - 1(skill based)	Current Affairs	
IV.	4.1	Core discipline -8	Sociology of Tribes	
	4.2	Core discipline -9	Industrial Sociology	
	4.3	Core discipline-10	Social Anthropology	
	4.4	Generic Elective-4 (interdisciplinary)	Economics	
	4.5	Ability Enhancement - 2(skill based)	Personality Development	
V.	5.1	Core discipline -11	Indian Social Thinkers	
	5.2	Core discipline -12	Sociology of Development and Change	
	Dis			
	5.3	Discipline specific elective 5.3 DSE -1		
	5.4	DSE -2	Sociology of Kinship Social Movements in India	
VI.	6.1	Core discipline -13	Labour and Social Welfare	
	6.2 Core discipline -14		Social Psychology	
	Discipline specific elective		Any two of the Following	
	6.3	DSE -3	Globalisation in Indian Society	
	6.	DSE -4	Field Work and Dissertation	



SEMESTER-I

CORE COURSE -1

Introduction of Sociology

Course Objective:

The mandate of the course is to introduce to students from diverse trainings and capability. The course is intended to introduce the students to a sociological way of thinking. It also provides a foundation for the other more detailed and specialized courses in sociology.

- 1. Sociological, Definition, Nature and Scope
- 2. Social groups, meaning, classification and reference groups
- 3. Stratification, meaning, form and theories(Max, Davis, Moree)
- 4. Culture, meaning, element, culture and personality and culture leg
- 5. Social structure, meaning, elements and functional theory
- 6. Status and role, meaning, type of status, role set, relation between status and role.

Essential Readings

- A) सिन्धी एंव गोस्वामी- समाजशास्त्रविवेचन
- B) पी. के. चौधरी समाजशास्त्र के सिद्धांत
- C) दोषी एंव जैन- समाजशास्त्र नई दिशा
- D) जे.पीं सिंघ- समाजशास्त्र अवधारणा सिद्धांत
- E) ALEX Inlxels What is sociology
- F) H.M Johnshan An introduction to sociology
- G) मख़र्जी रबिन्द्रनाथ एंव भरत अग्रवाल समाजशास्त्र एस बी पी. दी पब्लीकेशन



Core Course 02

Indian Society and change

The mandate of the Course is to introduce the Society and Culture of India.

- 1. Culture, Civilization, meaning and differences
- 2. Culture and personality, Cultural Lag
- 3. Joint family, types, problem of Morden family
- 4. Verna system, feature and relevance in Morden society
- 5. Caste, system, origin and its various theories
- 6. Panchayti Raj system relevance and problem

Essential Readings

- i. मोतीलालगुप्ता : भारत में समाज जयपुर,अकादमी,राजस्थान हिंन्दी ग्रन्थ,
- ii. वीरेंद्र प्रकाश शर्मा संरचना : भारतः में समाज, औरपरिर्वतन जयपुर, पंचशींलप्रकाशन,
- iii. मिथिलेश कुमार क्लासिकल पब्लिशिंग,जनजातीय समाज में शिक्षा और आधुनिकीकरण,नईदिल्ली, कम्पनी



SEMESTER-II

Core Course 03

Social Research and Methods

Objectives:

The course introduces the general principle of research methodology.

- 1. Social research: meaning, importance, stages.
- 2. Social survey: meanings, differences with social survey
- 3. Scientific method: meaning and stages.
- 4. Hypothesis: meaning, characteristics, sources
- 5. Sampling meaning, type
- 6. Quantitive techniques questionnaire, schedule

Essential Readings

- i. Kothari, C.R. 1988: research methodology, Wiley Easlerinbaglore.
- ii. Young, P.V. 1988 scientific social survey & Research Parentice Hall, New Delhi
- iii. Ram Ahuja, 2001: Research Methods, Rawat publication Jaipur
- iv. मख़र्जी रबिन्द्रनाथ, समाजीक शोध एंव सांख्यिकी, विवेक प्रकाशन नईदिल्ली
- v. सिंघसुरेन्द्र:- समाजीक अनुशधान भाग १ उत्तरप्रदेश ग्रान्थ अकादमी
- vi. पाण्डेय रविप्रकाश- समाजीक शोध शेखर प्रकाशन इलाहाबाद



Core Course-4

Pioneers of Social Thinkers

Course Objectives:

The mandate of the Course is to introduce the thought of pioneers' sociologist.

- 1. AUGUST COMTE:
 - a) Low of three stages
 - b) Positivism
- 2. SPENCER:
 - a) Theory of Social & Social Darwnism
- 3. DURKHIM:
 - a) Division of Labour
 - b) Theory of Suicide
- 4. MAX. WEBER:
 - a) Protestant Ethics and Spirit of Capitalism
 - b) Social Action
- 5. MAX:
 - a) Historical materialism
 - b) Theory of Class Struggle
- 6. Pareto:
 - a) Circulation of Elites
 - b) Action Theory

Essential Readings

- a) रिबन्द्रनाथ मखर्जी- समाजीक विचारधारा
- b) एस. एल.दोषी एंव पी. सी. जैन प्रमुख समाज शास्त्रिय विचारधारक
- c) एस. एल.दोषी- भारतीय समाजीक विचारधारक
- d) N.S Timasheff sociological Thoughts
- e) H.E Barnes: An Introduction to the History of sociology



SEMESTER-III

Core Course 05

Social Problem in India

Course Objective:

The course introduce the student to some major theoretical debates and concepts in social problems in contemporary India. A key thrust of the paper is towards developing a comparative understanding of deferent contemporary social problems in India.

- 1. Caste, Minorities, Problems in Morden India
- 2. Dowry death meaning and legislation
- 3. Poverty meaning and poverty elevation programmes
- 4. Unemployment meaning types and remedies
- 5. Child and women labour problem and legislation
- 6. Violence against women, meaning and provision for remedies

Essential Readings

- a) भारतीय समाजीक समास्याएं:- जी आर मदन
- b) श्रम एवं समाज कल्यानण:- इन्दुबाला सिंहा
- c) आधुनिक भारत में जातीवाद:- एम. एन श्रीनिवास
- d) समाजीक समास्याएं:- राम आहुजा
- e) Poverty: Jack. L. Roach
- f) Scheduled Cast and Welfare Measure :- ShantaKumari
- g) Social Problem and Social Disorganization:- C.B. Mamoria



Core Course 06

Urban Sociology

The objective of this course is to understand about the urban scenario.

- 1. Urban sociology, nature, scope and Importance of sociology
- 2. Town and its characteristic
- 3. Rural-urban continuum
- 4. Migration and Urbanization, Emigration trends, factors
- 5. Urban ecology and its theories
- 6. Urban community, meaning and characteristics

Essential Readings

- 1. Dr Prabhatkumarsingh Migration and Urbanization, JanakiPrakashan, patina new delhi
- 2. Dr Prabhatkumarsingh Migration and Urbanization, JanakiPrakashan, patina new delhi
- 3. नारीय समाजशास्त्र शशि के जैन
- 4. नगरीय समाजशास्त्र तोमर गोयल
- 5. बी एन सिहं एंव जन्मिंजय सिहं नगरीय



Core Course 07

Rural Sociology

Course Objective:

The Objective of this course is to give clear understanding about the concept of rural scenario.

- 1. Nature and scope of rural sociology
- 2. Rural social system :- concept of village , characteristics of rural society
- 3. Rural family concept and types
- 4. Cast system concept and characteristics
- 5. Panchayati raj system in India
- 6. Rural reconstruction and planning

Essential readings

- 1. Prabhatkumarsingh Migration and Urbanization, JanakiPrakashan, patina new delhi
- 2. Prabhatkumarsingh Migration and Urbanization, JanakiPrakashan, patina new delhi
- 3. बी एन सिहं एंव जिन्मंजय सिहं ग्रामीण समाज, विवेक प्रकाशन नई दिल्ली
- 4. A.R. Desai Rural Sociology in India
- 5. ग्रामीण समाजशास्त्र, रबिन्द्रनाथ मखर्जी
- 6. ग्रामीण समाजशास्त्र- रामबिहारी सिहं तोमर
- 7. S.L. Desai and P.C. Jain, Rural Sociology, Rawat Publication Jaipur



SEMESTER-IV

Core Course 08

Sociology of Tribes

Course Objectives:

This course introduce student to the concept of treble society.

- 1. The Concept of tribe- Tribe and cast
- 2. Classification of Tribal people food Gatherers, Hunter, shifting cultivators, nomads, artisan
- 3. Socio-culture profile Ethic and Cultural diversity
- 4. Society Family, Marriage, kinship, & Languages
- 5. Social Mobility and Change –Hinduization, Sanskritization
- 6. Tribal movement colonial and post-independence period

Essential Readings

- 1. Bose, n.k. 1967, culture and society in India, Asia publication House.
- 2. Dube S.C 1977 tribal Heritage of India, Vikash Publication new Delhi
- 3. Haimendrof, C.V. 1982- Tribes of India the struggle for survival, oxford university press.
- 4. Hasnean N. 1983 Tribes in India, HarnamPublications, New Delhi
- 5. Rao M.S.A. 1979 Social Movement in India, Manoihat, Delhi
- 6. Singh K.S. 1972, Tribal Situation in India, Indian Institute of Advance Study
- 7. Singh K.S. 1985- Tribal Society, Manohar, Delhi
- 8. Singh K.S. 1982- Tribal Movements in India, Vol-18 II (Manohar, New Delhi)
- 9. वर्मा उमेश कुमार २००७ जनजातीय समाजशास्त्र जानकी प्राकाशन पटना
- 10.नदीम हसनैन जनजातीय भारत
- 11. D.N मजुमदार एंव T. N मदन समाजिक मानवशास्त्र एक परिचय



Core course 09

Industrial Objective:

The Course aims to introduce Industry and Society

Industrial sociology

- 1. Industrial sociology nature and scope, importance of industrial sociology
- 2. Labour meaning and its characteristics and problem
- 3. Labour participation in management and problem in participation
- 4. Industry & labour relation cons illation, collective bargaining and adjudication.
- 5. Child and women labour, housing problems
- 6. Post-industrial society concept and characteristics

Essential Readings

- 1. Miller from industrial sociology (horper& Row, New York 1964)
- 2. Spaulding C.B.- An Industrial sociology 1970
- 3. Ramaswamy E.R. 1978- Industrial relation in India , MacMillan , New Delhi
- 4. Punekar S.D. etall ,1978 labour welfare , Trade union & Industrial Relation , Himalya publication house ,Bombay
- 5. Laxmanna. C. etall 1990- workers participation and industrial democracy ,agantha publication ,new Delhi
- 6. खरे एंव सिहा औद्योगिक समाजशास्त्र
- 7. P.R. सिंह एंव इन्दुबाला सिंहा श्रम एवं समाज कल्याण
- 8. राजेन्द्रकुमार सिहा औद्योगिक समाजशास्त्र
- 6. विश्वनाथ झा औद्योगिक समाजशास्त्र- रावत प्रकाशन जयपुर



Core Course 10

Social Anthropology

Course objective:

The course aims to introduce tribal society on India.

Social Anthropology:-

- 1. nature and scope of anthropology
- 2. anthropological thinkers
 - a. Evolutionary thinkers –E.B Taylor, LOO.H. Margon, James Frazer
 - b. functional thinkers Redcliff Brown, B. Malinowski
- 3. social organisation family, Marriage, kinship
- 4. primitive economic
- 5. primitive law & justice
- 6. religion, magic and science

Essential Readings:-

- 1. Bose N.K. 1967 CULTURE AND SOCIETY IN INDIA, Asia publication house
- 2. Hasnain N 1983 tribe in India , harnam publication new Delhi
- 3. Sharma, suresh 1994, tribal identity and Morden world sage, new Delhi
- 4. वर्मा उमेश कुमार २००७ जनजातीय समाजशास्त्र जानकी प्राकाशन पटना
- 5. Singh K.S. 1995- the scheduled tribes, oxford university press new Delhi.
- 6. नातेदारीं विवाह और परिवार, विवेक प्रकाशन नई दिल्ली
- 7. गोपीं रमन प्रसाद सिहं नातेदारीं विवाह और परिवार अग्रजाल प्रकाशन दरभंगा (बिहार)
- 8. डॉ. धरम विर महाजन एंव कमलेश महाजन नातेदारीं विवाह और परिवार का समाजशास्त्र विवेक प्रकाशन नई दिल्ली



SEMESTER-V

Core Course 11

Indian Social Thinker

Course Objective:-

This course aims to introduce Indian thinkers of sociology.

- 1. Ideological Perspective G.S. Ghurey
- 2. Structural Functional Perspective: M.N. Sriniwas, S.C dubey
- 3. Marxist perspective B.R Ambedkar, DevidHardiman
- 4. Mhatma Gandhi :- Non -Voilance, Satyagrah
- 5. Field work :- K.M. Kapadia

Essential Readings

- 1. एस. एल. दोषी:- भारतीय सम्माजीक विचारधारक रावत प्रकाशन जयपुर
- 2. वीं के नागला (अनुवादकनरेश र्भागव) भारतीय समाजशास्त्रिय चिंतन रावत प्रकाशन जयपुर
- 3. धरम विर महाजन एंव कमलेश महाजन भारतीय समाज के परिप्रेक्ष विवेक प्रकाशन दिल्ली



Core Course 12

Sociology of development and change

Course objective

The objective of this course is to understand the different aspect of development and changes in sociology it also give the understanding about the meaning and type of social change factors.

Sociology of development and change

- 1. Meaning and type of social change, factors of social change
- 2. Form of social change- Evolution progress, revolution, development
- 3. Theories of social change, Linear, Cysclical, Demographic
- 4. Process of social change sanskritnization , westernization, mordnization
- 5. Changing conceptions of development –human development , social development sustainable development
- 6. Path and agencies of social change capitalist, mixed economy, NGO

Essential Reading

- I. Dreze jean, and amrtyasen (1996) Indian economic development & social opportunities, New Delhi
- II. Desai A.R. 1985 India's pat of development, A Marxist approach, Bombay population Prakashan.
- III. Giddens Anthony 1996 Global problems and Ecological crisis, in introduction to sociology, 2nd edition New York w.wnortons Co.
- IV. Sharma S.L. 1986, development: socio-cultural dimension Jaipur Rawat.
- V. Sriniwas M.N. 1966 social change in Morden India , barkley university
- VI. Pandey surendra and sanjayjha- विकास और परिर्वतन का समाजशास्त्रS.R. publication Co. Ranchi.
- VII. Sharma S.L. 1994 perspective on sustainable in south Asia Kualalumpur ADIPA
- VIII. UNDP 1997, human development report New York oxford university press.
- IX. UNDP sustainable development report new York
- X. World Bank 1995 world development report New York.



SEMESTER-VI

Core course 13

Labour and social welfare

Course objective:-

This course is aims to introduce labour legislation and social welfare in India

- 1. Labour and social welfare- meaning and subject matter
- 2. Productive legislation
 - a. Factory act- 1948
 - b. Minimum act-1948
- 3. Regulative legislation
 - a. Trade union act-1926
 - b. Industrial dispute act-1947
- 4. Social security meaning, definition and types
- 5. Social security legislation
 - a. Maternity benefit act- 1961
 - b. Payment of gratuity act-1972
- 6. Labour administration in Jharkhand

Essential Readings

- 1. इन्दुवाला सिंह । श्रम एवं समाज कल्यानण सहित्य भवन आगरा
- 2. डॉ. रामकुमार तिवारी झारखण्ड में श्रम एवं कल्यानण शिवांगण प्रकाशन रांची
- 3. खरे एंव सिहा औद्योगिक समाजशास्त्र
- 4. P.R. सिंह एंव इन्दुबालासिहा श्रम एवं समाज कल्यानण
- 5. राजेन्द्र कुमार सिहा- औद्योगिक समाजशास्त्र
- 6. विश्वनाथ झा औद्योगिक समाजशास्त्र- रावत प्रकाशन जयपुर



Core course 14

Social psychology

The objective of this course to introduce the social psychology.

- 1. Nature, scope and subject matter of social psychology, Relationship with other social sciences
- 2. Leadership: Meaning and types
- 3. Attitude: Definitions, Formation and changes in attitude.
- 4. Public opinion: Meaning and means of public opinion
- 5. Crowd: meaning of crowd, deference between group and crowd
- 6. Rummour: meaning and remmour

Essential Readings

- I. Baron , R.A. and Byrne , D. (2002). Social psychology , 10th ed. New Delhi: person Education
- II. Myres , D.G.(1990) social psychology ,3rd ed. New York : McGraw Hill Inc.
- III. B. Kuppuswami: Introduction to social psychology book Asia publishing house : new Delhi
- IV. Singh A.K. Uchhatarsamajmanovigyan
- V. Suleman. A-adhuniksamajmanovigyan



SCHEME FOR CBCS IN UNDERGRADUATE B.A SOCIOLOGY PROGRAM

SEMESTER	CORE COURSE (12)	ABILITY ENHANCMENT COURSE (AECC)(2)	SKILL ENHANCEMENT COURSE(SEC)(2)	ELECTIVE DISCIPLINE SPECIFIC (DSE) (4)	GENERAL ELECTIVE PAPER
i.	English/MIL 1 DSC -1 A Introduction to sociaology -I	AECC 1 MIL/ENGLISH			
ii.	MIL/English -1 DSC -1 B Introduction to sociaology -II	AECC 2 Environmental science			
iii.	MIL/English -2 DSC-1 C Classical sociological thinkers DSC-2 C		SEC 1 CURRENT AFFAIRS		
iv.	MIL/English -2 DSC-1 D Research methodology and statistic DSC 2 D		SEC 2 PERSONALITY DEVELOPMENT		
V.			SEC 3 HISTORY OF CULTURE OF JHARKHAND	DSE -1 Sociology of religion DSE-2 Social movement in india DSE-3 Globalization and society	GE-1 Basic mathematics
vi.			SEC-4 COMPUTER APPLICATION	DSE-04 field work and dissertation	GE-2 conomics



DSC-1A Introduction to sociology - I

- 1. Origin and development of sociology as an independent discipline
- 2. Sociology meaning and definition, nature and scope
- 3. Relationship of sociology with others social science
- 4. Basic concepts society, community, association and institution
- 5. Social institution –family ,marriage, kinship and religion
- 6. Social group meaning, definition and classification

Books

- a) सिन्धी एंव गोस्वामी- समाजशास्त्र विवेचन
- b) दोषी एंव जैन- समाजशास्त्र नई दिशा
- c) जे.पीं सिंघ- समाजशास्त्र अवधारणा सिद्धांत
- d) जे.पीं सिंघ- समाजशास्त्र अवधारणा सिद्धांत
- e) ALEX Inlxels What is sociology
- f) H.M Johnshan An introduction to sociology
- g) मखर्जी रबिन्द्रनाथ एंव भरत अञ्जावाल समाजशास्त्र एस बी पी. दी पब्लीकेशन

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE

MANOHARPUR, W SINGHBHUM



DSC 1B Introduction to sociology - II

- 1. social change meaning ,theory evolution, Marxian
- 2. norms and value meaning and differences
- 3. culture meaning and culture and personality cultural leg
- 4. social stratification meaning form and theories
- 5. social mobility meaning and type
- 6. social structure, meaning, element function and Marxian theory

BOOKS

- A) सिन्धी एंव गोस्वामी समाजशास्त्र विवेचन
- B) पी. के. चौधरी समाजशास्त्र के सिद्धांत
- C) दोषी एंव जैन समाजशास्त्र नई दिशा
- D) जे.पीं सिंघ- समाजशास्त्र अवधारणा सिद्धांत
- E) ALEX Inlxels What is sociology
- F) H.M Johnshan An introduction to sociology



DSC-1C Classical sociological thinkers

- 1. AUGUST COMTE:
 - c) Low of three stages
 - d) Positivis
- 2. SPENCER:
 - b) Theory of Social & Social Darwnism
- 3. MAX. WEBER:
 - c) Protestant Ethics and Spirit of Capitalism
 - d) Social Action
- 4. Pareto:
 - a) Circulation of elite
 - b) Action theory
- 5. Emile Durkheim:
 - a) Theory of suicide
 - b) Division of labour
- 6. Karl marx
 - a) Historical materialism
 - b) Class conflict

Essential Readings

- 1. स्मकालीन समाजशास्त्रिय सिद्धांत गुप्ता व सैनी
- 2. आधुनिक्ता उत्तर आधुनिक्ता एंच नव समाज शास्त्रिय सिद्धांत एस. एल.दोषी
- 3. Ethino methodology -H Garfinked
- 4. Phenomenology A. Schtz



DSC 1D Research methodology and statistics

- 1. Social research, meaning and importance
- 2. Scientific method, meaning and stages
- 3. Hypothesis, meaning, characteristics, source
- 4. Sampling, meaning and types
- 5. Primary and secondary source of data
- 6. Methods of data collection observation , questioner, schedule, interview

Books

- i. Kothari, C.R. 1988: research methodology, Wiley Easlerinbaglore.
- ii. Young, P.V. 1988 scientific social survey & Research Parentice Hall, New Delhi
- iii. Ram Ahuja, 2001: Research Methods, Rawat publication Jaipur
- मखुर्जी रिबन्द्रनाथ, समाजीक शोध एंव सांख्यिकी, विवेक प्रकाशन नई दिल्ली iv.
- सिंघ सुरेन्द्र:- समाजीक अनुशधान भाग १ उत्तरप्रदेश ग्रान्थ अकादमी ٧.
- पाण्डेय रवि प्रकाश- समाजीक शोध शेखर प्रकाशन इलाहाबाद vi.



DSE 01

SOCIOLOGY OF RELIGION

- 1. Religion- element and scope
- 2. Religion magic, difference, type of magic
- 3. Origin of theories of Religion E.B Tylor, jamesfrazer, maxmuller
- 4. Emile Durkheim sociology of religion
- 5. Max weber protestant ethics and the spirits of capitalism
- 6. Secularism:- meaning, characteristics, impact
- 7. Major religion of India

Essential Readings

- I. Baird , Robert D. (ed.) , 1995 (3rd ed.) religion on mordent india .delhi : manohar
- II. Mazumdar, H. D. 1986. india's religious heritage. new delhi: allied
- III. Roberts. keith A. 1984. Religion in sociological perspective. new York: Dorsey press
- IV. Shakir, Moin (ed.) 1989. Religion, state and polotics in India. Delhi: Ajanta publications
- V. Turner, Bryan S. 1991 (2nd ed.), Religion and social theory, London: sag.
- VI. Ibr ,Mohmmad : sociology of religion Prentice hall of india PVT LTD, new delhi.
- VII. P.K chaudhary (ed.) sociology of pilgrims, kalpaazpublication, New Delhi.



DSE 02

Social Movements in India

- 1. Social movements Definition, types & features
- 2. Traditional social movements in India
 - a. Present movement,
 - b. Nationalist movement
- 3. Social movement on India,
 - a. Dalit movement,
 - b. Women's movement
- 4. Movement in Jharkhand
 - a. Santhal movements
 - b. Munda movements
- 5. New social movements in India
 - a. Total revolution
 - b. Environmental movements

Essential Readings

- I. Ghanshyam shah : social movements in India
- II. Desai, A.R. ed. 1979: present struggles in India (Bombay: oxford university press)
- III. Dhangagarew, D.N , 1983 : present movements in India 1920-1950(Delhi: oxford university press)
- IV. Rao , M.S.A. 1979: social movements in India (new Delhi)
- V. Singh, K.S. 1982: tribal movements in India(new Delhi: manohar)
- VI. राजगोपाल सिंघ मध्य प्रदेश हिंदी भारतीय दलित ग्रन्थ अकादमी भोपाल
- VII. पिनेशनल प्रकाशन समाजीक आंदोलन का समाजशास्त्र जैनसी जयपुर house
- VIII. कुमार सुरेश सिंघवाणी प्रकाशन नई बिरसा मुण्डा एवं उनका आंदोलन दिल्ली
- IX. बीविरोतम Jharkhand history and culture bihar hindi ग्रन्थ आकादमी पटना



DSE 03

Globalization and society

- 1. Globalization: meaning, history of Globalization and characteristics
- 2. Role of information and communication technology
- 3. Globalization and Indian culture
- 4. Advantages and disadvantages of Globalization
- 5. Agencies of Globalization
 - a. Media
 - b. Market
 - c. International Monetary fund
 - d. World bank
- 6. Globalization and tribal society

Essential Readings

- I. पाण्डेय रवि प्रकाश वैश्वीकरण एवं सम्माज विजय प्रकाशण मंदीर
- II. भागव नरेश- वैश्वीकरण समाज शास्त्रिय परिप्रेक्ष
- III. Singh Y: culture change in india: identity and Globalization, rawat publication, Jaipur
- IV. Appadurai, Arjun 1997, modernity at large: cultural dimension of Globalization oxford, new Delhi
- V. Gautamambrish, 2014, tribals Global era (society and economy) common wealth publish



04 Field work and dissertation

Each student will have to do field work on a topic assigned, under the supervision of a teacher. For this purpose he/she will submit a dissertation based on field work under taken by him/her.

Distribution of marks are the following:

External assessment

- I. Field work and report writing =60
- II. Viva voce exam =40



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Kolhan University, Chaibasa PG Department of English & Cultural Studies

Revised Courses of Study under Choice Based Credit System

B.A. Honours in English

Core + DSE Semester I, II, III, IV, V & VI

B.A. Programme, English

DSC+DSE Semester I, II, III & IV, V & VI

DSC - MIL English

Semester I, II, III & IV

B.A., B.Sc., B.Com. Honours & Programme

AECC 1 MIL Communication Course, EnglishSemester I

B.A. Honours Generic Elective Course, English

Semester I, II, III & IV

B.A. Programme Generic Elective Course, English

Semester V & VI

B.A. Honours & Programme

SEC 1, 2, 3, & 4

ACTING PRINCIPAL BT. AUGUSTINE'S COLLEGE

Effective From: 2020 – 2021

Kolhan University, Chaibasa PG Department of English & Cultural Studies

Courses of Study – B.A. (English Honours)

Course Structure

Semester I:

Core Course I : 100 Marks
Core Course II : 100 Marks
Generic Elective I : 100 Marks
AECC I (MIL) : 50 Marks

Semester II:

Core Course III : 100 Marks
Core Course IV : 100 Marks
Generic Elective II : 100 Marks
AECC II (EVS) : 50 Marks

Semester III:

Core Course V : 100 Marks
Core Course VI : 100 Marks
Core Course VII : 100 Marks
Generic Elective III : 100 Marks
SEC I (GK & CA) : 50 Marks

Semester IV:

Core Course VIII : 100 Marks
Core Course IX : 100 Marks
Core Course X : 100 Marks
Generic Elective IV : 100 Marks
SEC II (PD) : 50 Marks

Semester V:

Core Course XI : 100 Marks
Core Course XII : 100 Marks
Elective (DSE I) : 100 Marks
Elective (DSE II) : 100 Marks

Semester VI:

Core Course XIII : 100 Marks
Core Course XIV : 100 Marks
Elective (DSE III) : 100 Marks
Elective (DSE IV) : 100 Marks

Total Marks: 2400

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE

Kolhan University, Chaibasa PG Department of English & Cultural Studies Courses of Study – B.A. (English Honours) Core Course in English

Effective from: 2020 – 2021

COURSE STRUCTURE

Semester I:

Core -I Introduction to Literature

Core -II History of English Literature from the Beginning to the Eighteenth Century

Semester II:

Core -III British Poetry: From the Age of Elizabeth to the Eighteenth Century

Core-IV British Novel: Up to the Romantic Period

Semester III:

Core-V British Drama: From the Age of Elizabeth to the Eighteenth Century

Core-VI British Non-Fictional Prose: From the Age of Elizabeth to the 18th Century

Core -VII History of English Language

Semester IV:

Core-VIII History of English Literature: From the Romantic Age to the 20th Century

Core-IX Literary Criticism: From Aristotle to I. A. Richards

Core-X British Poetry: From the Romantic Age to the Twentieth Century

Semester V:

Core-XI Twentieth CenturyBritish Drama

Core -XII British Novel: From the VictorianAge to the Twentieth Century

DSE 1 A: Indian Writing in English: Poetry & Drama

DSE 1 B: American Literature: Poetry & Drama

DSE 2 A: Indian Writing in English: Novel

DSE 2 B: American Literature: Novel

Students should study two Discipline Specific Elective (DSE) courses in Fifth Semester.

Students are required to make a choice between DSE 1A and DSE 1B and similarly between

DSE 2 A and DSE 2 B.

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Semester VI:

Core-XIII British Essays & Short Stories: From the Romantic Age to the 20 Century

Core-XIV- Modern Literary Criticism

DSE 3 A: Introduction to Linguistics

DSE 3 B: Introduction to Cultural Studies

DSE4: Project Work

Students should study two Discipline Specific Elective (DSE) courses in Sixth Semester. Students are required to make a choice between DSE 3 A and DSE 3 B. DSE 4 is project work.

Question Pattern and Marking Scheme:

Each course will be of the value of **100 Marks**. There will be a **ContinuousInternal Assessment** of **30 Marks** and an **End Semester Exam (ESE)** of **70 marks**. The Continuous Internal Assessment will be based on Mid Term Tests = 15 Marks, Assignments/Projects/Posters/Quiz/Seminar = 10 Marks and Classroom attendance and active participation with leadership qualities, good manners and articulation in routine class, instructional deliveries (case studies/seminars/presentations) = 05 Marks,

KOLHAN UNIVERSITY, CHAIBASA

PG DEPARTMENT OF ENGLISH& CULTURAL STUDIES

Courses of Study-B.A. (Honours) in English SEMESTER -I

Core Course 1(C1)– Introduction to Literature

End Semester Exam: 70 Marks Internal Assessment: 30 Marks

UNIT 1

Literature: Meaning and Significance; Poetry: Definition, Characteristic Features and Major Types – Sonnet, Elegy, Epic, Ballad; Drama: Definition, Characteristic Features and Major Types – Tragedy, Comedy, Tragi-comedy, Problem Play; Fiction: Definition, Characteristic Features and Major Types – Picaresque Novel, Epistolary Novel, Gothic Novel, Historical Novel, Psychological Novel; Nonfiction: Definition, Characteristic Features

UNIT 11

Poetry - Lyric, Ode, Pastoral Poetry & Dramatic Monologue; Drama - Miracle, Morality, Mystery, Interludes, Comedy of Humor, Comedy of Manners, Sentimental Comedy & Poetic Drama; Fiction – Short Story, Novella& Regional Novel; Non-fiction - Essay, Travel Writings, Memoirs, Biography & Autobiography; Literary Criticism: Definition, Nature and Function.

Source Books:

B Prasad, A Background to the Study of English Literature, MacMillan

M H Abrams & Geoffrey Galt Harpham, A Handbook of Literary Terms, Ceanage Learning

Recommended Readings:

Oxford Companion to English Literature, OUP

WH Hudson, An Introduction to the Study of English Literature, Booksway Kolkata

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the topics prescribed in Unit I.

2x 15 = 30

2. Four short notesout of eight alternatives on the topics prescribed in Unit II.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

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Core Course 2 (C2) – History of English Literature from the Beginningto the Eighteenth Century

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Anglo- Saxon Age; Medieval English Literature – Religious Prose, Medieval Poetry & Medieval Drama; Elizabethan & Jacobean Literature - A Literary Survey of Poetry, Drama & Prose; From the Caroline Age to the Commonwealth Period – A Literary Survey of Poetry, Drama & Prose; Restoration Literature – A Literary Survey of Poetry, Drama & Prose; Eighteenth Century Literature – A Literary Survey of Poetry, Drama, Prose & Novel

Source Books:

W. J. Long, History of English Literature, Kalyani Publishers

Ifor Evans, A Short History of English Literature, Penguin

Recommended Readings:

David Daiches, A Critical History of English Literature, Supernova Publishers

Pramod K Nayar, A Short History of English Literature, Foundation Books

Ronald Carter & John Mcrae, The Routledge History of Literature in English

George Sampson, Concise Cambridge History of English Literature

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the topics prescribed. 2x15 = 30

2. Four short notes out of eight alternatives on the topics prescribed.

4x05 = 20

3. Ten objective type questions.

 $10 \times 02 = 20$

Continuous Internal Assessment: 30 Marks

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SEMESTER-II

Core Course 3 (C3) – British Poetry: From the Age of Elizabeth to the Eighteenth Century

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Thomas Wyatt : I Find No Peace

Edmund Spenser : Sonnet No 75 (One day I Wrote her Name)

William Shakespeare : Sonnet 60

John Donne : The Sunne Rising

Andrew Marvell : To His Coy Mistress

John Milton : On His Blindness

John Dryden : A Song for St. Cecilia's Day

Alexander Pope : Elegy to the Memory of an Unfortunate Lady

Thomas Gray : Elegy Written in a Country Churchyard

Source Book:

David Green (Ed) Winged Word, MacMillan

Recommended Reading:

B Prasad, A Short History of English Poetry, Trinity Press

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the poems & poets prescribed.

2x15 = 30

2. Four explanations out of eight alternatives from the poems prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

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Core Course 4(C4) – British Novel: Up to the Romantic Period

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Daniel Defoe : Robinson Crusoe

Jonathan Swift : Gulliver Travels

Jane Austen : Pride and Prejudice

Mary Shelley : Frankenstein

Recommended Reading

E M Forster, Aspects of Novel, Penguin

D H Lawrence, Why the Novel Matters

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives from the texts prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

SEMESTER-III

Core Course 5 (C5) – British Drama: From the Age of Elizabeth to the Eighteenth Century

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

William Shakespeare : Macbeth

Oliver Goldsmith : She Stoops to Conquer

Recommended Reading:

Allardyce Nicoll, History of English Drama, Cambridge University Press

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four explanations out of eight alternatives from the texts prescribed. 4x05 = 20

3. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W. SINGHBHUM

Core Course 6 (C6) – British Non Fictional Prose: From the Age of Elizabeth to the Eighteenth Century

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Francis Bacon : Of Studies, Of Revenge

Joseph Addison : Sir Roger at Home, Meditations on Westminster Abbey

Richard Steele : Recollections of Childhood, The Spectator Club

Jonathan Swift : A Modest Proposal

Oliver Goldsmith : On National Prejudice, The Beau Tibbs

Source Book:

Susanta K Sinha(Ed) English Essayists, OUP

Recommended Reading:

A C Benson, The Art of Essayist

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives from the texts prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

Core Course 7 (C7) – History of English Language

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Indo European Family of Languages and English

Old English: Characteristic Features of Old English, Dialects of Old English

Middle English: Characteristic Features of Middle English, Dialects of Middle English

Modern English: Characteristic Features of Renaissance and Elizabethan English, The Rise of Standard English, English in the Twentieth Century.

Foreign Influences: Latin Influence, Scandinavian Influence & French Influence

Source Books:

A C Baugh & Cable, History of English Language, Routledge

D Thakur, A Concise History of English, Bharati Bhawan

Recommended Readings:

FT Wood, A History of the English Language

Chhanda Roy, A Student's Companion to English Language, Bharati Bhawan

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the topics prescribed. 2x15 = 30

2. Four short notes out of eight alternatives from the topics prescribed. 4x05 = 20

3. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE

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SEMESTER -IV

Core Course 8 (C8) – History of English Literature: From the Romantic Age to the Twentieth Century

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

UNIT 1

The Romantic Age - A Literary Survey of Poetry, Novel & Non-fictional Prose, The Victorian Age - A Literary Survey of Poetry, Novel & Non-Fictional Prose, Twentieth Century Literature - A Literary Survey of Poetry, Drama, Novel & Non-fictional Prose

UNIT II

Avant Garde Movements – Pre-Raphaelite as Victorian Avant Garde, Cubism, Symbolism, Imagism, Surrealism, Expressionism, Impressionism, Dadaism, Absurdism, Futurism, Modern& Postmodern Period: Postcolonial Period

Source Books:

W J Long, *History of English Literature*, Kalyani Publishers

Ifor Evans, A Short History of English Literature, Penguin

Recommended Readings:

David Daiches, A Critical History of English Literature, Supernova Publishers

Pramod K Nayar, A Short History of English Literature, Foundation Books

George Sampson, Concise Cambridge History of English Literature

Ronald Carter & John Mcrae, The Routledge History of Literature in English

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the topics prescribed in Unit I.

2x15 = 30

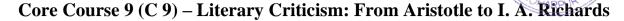
2. Four short notes out of eight alternatives from the topics prescribed in Unit II.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks



End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Aristotle : Theory of Imitation, Theory of Tragedy (From The Poetics)

Longinus : Sources of Sublimity (From On the Sublime)

Philip Sydney : His Classicism & Defence of Poetry (From Apology for Poetry)

John Dryden : Ancient vs. Moderns, French vs. English, Prose vs. Verse

(From An Essay of Dramatic Poesie)

William Wordsworth : Theory of Poetry & Poetic Diction (From Preface to Lyrical Ballads)

Matthew Arnold : Poetry as Criticism of Life & Touchstone Method

(From The Study of Poetry)

T S Eliot : Impersonality of Art & Objective Correlative

I A Richards : Psychology and Literary Appreciation

Source Book:

B. Prasad, An Introduction to English Criticism, MacMillan

Recommended Readings:

Charles E Bressler, Literary Criticism, An Introduction to Theory and Practice, Longman

M.H. Abrams & Geoffrey Galt Harpham, A Handbook of Literary Terms, Ceanage Learning

Oxford Companion to English Literature, OUP

Patricia Waugh, An Oxford Guide to Literary Theory and Criticism

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the topics prescribed.

2x15 = 30

2. Four short notes out of eight alternatives from the topics prescribed in the core course.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

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Core Course 10 (C 10) – British Poetry: From Romantic Age to the Twentieth Century

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

William Wordsworth : Intimations of Immortality Ode

Samuel Taylor Coleridge : Kubla Khan

Percy Bysshe Shelley : Ode to the West Wind

John Keats : Ode to a Nightingale

Alfred Tennyson : Tithonus

Robert Browning : My Last Duchess

W B Yeats : The Second Coming

T S Eliot : The Love Song of J. Alfred Prufrock

Siegfried Sassoon : The Death Bed

Wilfred Owen : Insensibility

Source Book:

David Green (Ed), Winged Word, MacMillan

Recommended Reading:

B Prasad, A Short History of English Poetry, Trinity Press

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the poems & poets prescribed. 2x15 = 30

2. Four explanations out of eight alternatives from the poems prescribed 4x05 = 20

3. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

SEMESTER -V

Core Course 11 (C 11) – Twentieth CenturyBritish Drama

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

G. B. Shaw : Candida

Samuel Beckett : Waiting for Godot

Recommended Reading:

Allardyce Nicoll, History of English Drama, Cambridge University Press

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four explanations out of eight alternatives from the texts prescribed. 4x05 = 20

3. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

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Core Course 12 (C 12) – British Novel: From the Victorian Age to the Twentieth Century

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Emily Bronte : Wuthering Heights

Charles Dickens : A Tale of Two Cities

Thomas Hardy : Mayor of Casterbridge

George Orwell : Animal Farm

Recommended Reading

E M Forster, Aspects of Novel, Penguin

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives from the texts prescribed.4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

DSE 1A -Indian Writing in English: Poetry & Drama

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I: Poetry

Toru Dutt : Baugmaree

Rabindranath Tagore : Heaven of Freedom

Sarojini Naidu : The Palanquin Bearers

Nissim Ezekiel : Night of the Scorpion

Jayanta Mahapatra : Relationship

A K Ramanujam : On the Death of a Poem

Kamala Das : Words

Source Book:

An Anthology of Indian Poetry in English, Ed. By a Board of Editors, Orient Blackswan

Unit II: Drama

Girish Karnad : Tughlaq

Mahesh Dattani : Tara

Recommended Readings:

Bruce King, Modern Indian Poetry in English, Oxford University Press

Kaustav Chakraborty, Indian English Drama, Prentice Hall

K Srinivasa Iyengar, Indian Writing in English, Sterling

M K Naik, A History of Indian English Literature, Sahitya Akademi

M K Naik & Shyamala Narayan, Indian English Literature; A Critical Survey 1980-2000, Pencraft

Mahesh Dattani, Me and My Plays

Examination, Evaluation and Distribution of Marks:

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End Semester: 70 Marks (3 Hours)

1. One long answer type critical questionout of four alternatives from the texts prescribed in Unit I.

1x15 = 15

2. One long answer type critical question out of four alternatives from the texts prescribed in Unit II.

1x15 = 15

3. Two explanations out of four alternatives from the texts prescribed in Unit I. 2x05 = 10

4. Two explanations out of four alternatives from the texts prescribed in Unit II. 2x05 = 10

5. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

DSE 1 B – American Literature: Poetry & Drama

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I: Poetry

Walt Whitman : Out of the Cradle Endlessly Rocking

Longfellow : A Psalm of Life

Robert Frost : i) Desert Places ii) Birches

Emily Dickinson : Hope is the Thing Sylvia Plath : Birthday Present

Langston Hughes : Let America be America Again

Allen Ginsberg : Howls

Maya Angelou : On the Pulse of Morning

Source Book:

The Golden Treasury, Palgrave, Rupa & Co

Unit II: American Drama – Textual Readings

Tennessee Williams : The Glass Menagerie

Arthur Miller : All My Sons

Recommended Readings:

Richard Ruland & Malcolm Bradbury, From Puritanism to Post- Modernism: A History of American Literature, Penguin

Richard Gray, History of American Literature, Willey-Blackwell

Richard Gray, A History of American Poetry, Willey-Blackwell

Masud Ali Khan, Modern American Drama, Sublime Publications

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. One long answer type critical question out of four alternatives from the texts prescribed in Unit I.

1x15 = 15

2. One long answer type critical question out of four alternatives from the texts prescribed in Unit II.

1x15 = 15

3. Two explanations out of four alternatives from the texts prescribed in Unit I. 2x05 = 10

4. Two explanations out of four alternatives from the texts prescribed in Unit II. 2x05 = 10

5. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

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DSE 2 A – Indian Writing in English: Novel

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

R. K. Narayan : The Guide

Mulk Raj Anand : Untouchable

Githa Hariharan : When Dreams Travels

Tabish Khair : The Bus Stopped

Recommended Readings:

M K Naik, Studies in Anglo Indian Fiction, Abhinav Publication

M K Naik, Indian English Fiction: A Critical Study, Pencraft

K Srinivasa Iyengar, Indian Writing in English, Sterling

M K Naik, A History of Indian English Literature, Sahitya Akademi

M K Naik & Shyamala Narayan, Indian English Literature; A Critical Survey 1980-2000, Pencraft

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives from the texts prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

DSE2 B - American Literature: Novel

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Nathaniel Hawthorne : The Scarlet Letter

F. Scott Fitzgerald : The Great Gatsby

Ernest Hemingway : The Old Man and the Sea

Toni Morrison : The Bluest Eye

Recommended Readings:

Richard Ruland & Malcolm Bradbury, From Puritanism to Post- Modernism: A History of American Literature, Penguin

Richard Gray, History of American Literature, Willey-Blackwell

Alfred Bendixen, The Development of American Novel: The Transformation of Genre, Willey-Blackwell

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives from the texts prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

Note: Students should study Two papers of Discipline Specific Elective (DSE) in Fifth Semester. Students are required to make a choice between DSE 1A and DSE 1B and similarly between DSE 2 A and DSE 2 B

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SEMESTER-VI

Core Course 13 (C 13) – British Essays & Short Stories: From the Romantic Age to the Twentieth Century

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I: Essays

Charles Lamb : Dream Children

William Hazlitt : On Familiar Style

E V Lucas : A Funeral

A G Gardiner : OnSuperstitions

Aldous Huxley : Selected Snobberies

J. B. Priestly : On Getting Off to Sleep

Unit I: Short Stories

Thomas Hardy : The Three Strangers

Oscar Wilde : The Selfish Giant

O. Henry : The Dream

W. Somerset Maugham : Mr. Know-All

Source Books:

D. Thakur (Ed)Selected Short Stories, MacMillan

Susanta K Sinha (Ed), English Essayists, OUP

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. One long answer type critical question out of four alternatives from the texts prescribed in Unit I.

1x15 = 15

2. One long answer type critical question out of four alternatives from the texts prescribed in Unit II.

1x15 = 15

3. Two short answer type questions out of four alternatives from the texts prescribed in Unit I

2x05 = 10

4. Two short answer type questions out of four alternatives from the texts prescribed in Unit II.

2x05 = 10

5. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

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Core Course 14 (C 14) – Modern Literary Criticism

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

UNIT-I

George Lukacs : The Ideology of Modernism.

Terry Eagleton : *Marxist Criticism*.

Edward Said : The Discourse of the Orient

Helene Cixous : The Laugh of the Medusa.

UNIT-II

Liberal Humanism, Modernism, Structuralism, Post-Structuralism, Post-Modernism, Feminism, Post-Colonialism, Psychoanalytical Criticism, Formalism, Surrealism, Marxism, Deconstruction, Narratology, Orientalism, Subaltern Theory, Eco Criticism, Eco Feminism, Queer Theory

Source Books:

M H Abrams & Geoffrey Galt Harpham, A Handbook of Literary Terms, Ceanage Learning

Peter Barry, Beginning Theory

Walder, Dennis, Literature in the Modern World: Critical Essays and Documents, Oxford University Press, 1990.

Recommended Readings:

Charles E Bressler, Literary Criticism, An Introduction to Theory and Practice, Longman

Oxford Companion to English Literature, OUP

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type critical questions out of four alternatives on the topics in Unit I.2x15 = 30

2. Four short notes out of eight alternatives from the topics prescribed in Unit II. $4 \times 5 = 20$

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

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DSE 3 A – Introduction to Linguistics

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I: Introducing Linguistics

Linguistics – Definition, Scope & Branches, Linguistic Concepts: Langue and Parole, Synchrony and

Diachrony, Signifier and Signified, Syntagmatic and Paradigmatic Relations, Form and Substance.

Unit II: Phonetics

Phonetics & Phonology, Phonemes, Sounds of English and their Phonetic Symbols, Organs of

Speech, Air Stream Mechanism, Description of English Consonants, Description of English Vowels

Unit III: Morphology & Semantics

Morphemes, Types of Morphemes-Free, Bound, Derivational and Inflectional, Difference Between

Inflectional and Derivational Morphemes, Process of Word Formation, What is Semantics?,

Sentence & Utterance, Proposition, Contradiction, Entailment, Ambiguity and Paraphrase, Meaning-

Denotative & Connotative, Meaning & Ambiguity, Synonymy & Antonymy, Homonyms, Polysemy,

Semantic Change.

Unit IV: Syntax

Grammatical, Functional and Semantic Categories; Phrases – Noun Phrase, Adjective Phrase, Verb

Phrase, Adverb Phrase, Prepositional Phrase; Clauses - Main Clauses, Subordinate Clauses;

Subordination and Co-ordination, Basic Sentence Patterns, Type and Function of Sentences -

Declarative, Interrogative, Imperative, Exclamatory; IC Analysis, Phrase Structure Grammar and

Generative Grammar.

Source Books:

T Bala Subramaniam, A Text Book of English Phonetics for Indian Students

Sayal & Jindal, Introduction to Linguistics, Language, Grammar & Semantics

D. Thakur, *Phonetics*, Linguistics Simplified Series, Bharti Bhavan

D. Thakur, *Morphology*, Linguistics Simplified Series, Bharti Bhawan

D. Thakur, Semantics, Linguistics Simplified Series, Bharti Bhavan

D. Thakur, Syntax, Linguistics Simplified Series, Bharti Bhawan

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George Yule, *The Study of Language*John Lyons, *Introduction to Theoretical Linguistics*S K Verma, *Modern Linguistics*



Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the topics prescribed.

2x15 = 30

2. Four short notes out of eight alternatives from the topics prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE WANOHARPUR, W SINGHRHUM

DSE 3 B – Introduction to Cultural Studies

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I:Introducing Culture & Cultural Studies

Culture: Definition and Scope

Cultural Studies: Definition, Scope and Methodology

Unit II: Key Concepts in Cultural Studies

Structuralism, Post Structuralism, Marxism, Post Modernism, Feminism & Post Feminisms, Capitalism, Neo-Liberalism, Neo Marxism, Orientalism, Post-Colonialism, Nationalism and Post-Nation, Truth and Post-Truth, Subaltern Studies, Marginalisation, Body Culture and Power, Cultural Subjectivity, Culture and Democracy, Gender & Culture, Film & Culture, Media & Culture, Media and Public Domain, Oral Narratives, Folk Culture, Techno-Culture, Contesting Culture

Source Books:

Pramod K Nayar, An Introduction to Cultural Studies, Viva Books

The Routledge Critical and Cultural Theory Reader

Recommended Readings:

John Storey, What is Cultural Studies; A Reader, Hodder Education

Brian Longhurstetal, Introducing Cultural Studies, Second Edition, Pearson Education

Amy Villarejo, Film Studies; The Basics, Routledge

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the topics prescribed.

2x15 = 30

2. Four short notes out of eight alternatives from the topics prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

Note: Students should study two papers of Discipline Specific Elective (DSE) in Sixth Semester. Students are required to make a choice between DSE 3 A and DSE 3 B. DSE 4 (Project Work) is required to be attempted by all students.

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DSE 4 -PROJECT WORK



Total Marks: 100

The department in consultation with the teachers concerned will assign the topics/areas for Project Work. Students will be assessed on the basis of their project and responses to the questions at viva voce examination. The examination will be based on the evaluation of submitted project (70 marks) and viva voce (30 marks)

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Kolhan University, Chaibasa PG Department of English & Cultural Studies Courses of Study – B.A. Programme

Course Structure

Semester I:

DSC I A : 100 Marks
DSC II A : 100 Marks
DSC-MIL I : 100 Marks
AECC I (MIL) : 50 Marks

Semester II:

DSC I B : 100 Marks
DSC II B : 100 Marks
DSC-MIL II : 100 Marks
AECC II (EVS) : 50 Marks

Semester III:

DSC I C : 100 Marks
DSC II C : 100 Marks
DSC-MIL III : 100 Marks
SEC I : 50 Marks

Semester IV:

DSC I D : 100 Marks
DSC II D : 100 Marks
DSC-MIL IV : 100 Marks
SEC II : 50 Marks

Semester V:

Elective (DSE I A) : 100 Marks Elective (DSE II A) : 100 Marks Generic Elective I : 100 Marks SEC III : 50 Marks

Semester VI:

Elective (DSE I B) : 100 Marks
Elective (DSE II B) : 100 Marks
Generic Elective II : 100 Marks
SEC IV : 50 Marks

Total Marks: 2100

Kolhan University, Chaibasa PG Department of English & Cultural Studies Courses of Study – B. A. Programme Course in English Effective from: 2020–2021

COURSE STRUCTURE

Semester I:

DSC I A – Introduction to Literature

Semester II:

DSC 1 B –British Poetry

Semester III:

DSC I C - British Drama

Semester IV:

DSC I D- British Novel

Semester V:

DSE I A (i): Indian English Novel

DSE I A (ii): American Novel

Semester VI:

DSE 1 B (i): Indian English Drama & Poetry

DSE I B (ii): American Drama & Poetry

Note:In Semester Five and Six students should study two papers of Discipline Specific Elective (DSE) of English. Students are required to make a choice between DSE 1A - I and DSE 1 A - II(in Semester V) and between DSE 1B - I and DSE 1 B - II (in Semester VI).

KOLHAN UNIVERSITY, CHAIBASA

PG DEPARTMENT OF ENGLISH& CULTURAL STUDIES

Courses of Study - B. A. Programme Course in English SEMESTER -I

Core Course 1(C1)– Introduction to Literature

End Semester Exam: 70 Marks Internal Assessment: 30 Marks

UNIT 1

Literature: Meaning and Significance; Poetry: Definition, Characteristic Features and Major Types – Sonnet, Elegy, Epic, Ballad; Drama: Definition, Characteristic Features and Major Types – Tragedy, Comedy, Tragi-comedy, Problem Play; Fiction: Definition, Characteristic Features and Major Types – Picaresque Novel, Epistolary Novel, Gothic Novel, Historical Novel, Psychological Novel; Non-fiction: Definition, Characteristic Features

UNIT 11

Poetry - Lyric, Ode, Pastoral Poetry & Dramatic Monologue; Drama - Miracle, Morality, Mystery, Interludes, Comedy of Humor, Comedy of Manners, Sentimental Comedy & Poetic Drama; Fiction - Short Story, Novella & Regional Novel; Non-fiction - Essay, Travel Writings, Memoirs, Biography & Autobiography; Literary Criticism: Definition, Nature and Function.

Source Books:

B Prasad, A Background to the Study of English Literature, MacMillan

M H Abrams & Geoffrey Galt Harpham, A Handbook of Literary Terms, Ceanage Learning

Recommended Readings:

Oxford Companion to English Literature, OUP

WH Hudson, An Introduction to the Study of English Literature, Booksway Kolkata

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

4. Two long answer type questions out of four alternatives on the topics prescribed in Unit I.

2x15 = 30

5. Four short notes out of eight alternatives on the topics prescribed in Unit II.

4x05 = 20

6. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

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Semester -II



DSC I B – British Poetry

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I

William Shakespeare : Fear No More

John Donne : From Holy Sonnets No. 1

George Herbert : Virtue

Alexander Pope : Ode on Solitude

Thomas Gray : *Hymn to Adversity*

S T Coleridge : Dejection, An Ode

John Keats : Ode on a Greecian Urn

Matthew Arnold : Longing

Source Book:

David Green, The Winged Word, Macmillan

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of Four alternatives from the poems prescribed 2x15 = 30

2. Four explanations out of Eight alternatives from the poems prescribed. 4x05=20

3. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

Semester -III



DSC I C – British Drama

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Willian Shakespeare

Macbeth

G B Shaw

Arms and the Man

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of Four alternatives from the plays prescribed.

2x15 = 30

2. Four explanations out of Eight alternatives from the plays prescribed. 4x05 = 20

3. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHBHUM

Semester -IV



DSC 1 D - British Novel

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Jane Austen Pride and Prejudice
Charles Dickens David Copperfield

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of Four alternatives from the novels prescribed.

2x15 = 30

2. Four short notes out of Eight alternatives from the novels prescribed. 4x05 = 20

3. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE WANOHARPUR, W SINGHRHUM

Semester - V

DSE 1A - I – Indian Writing in English: Novel

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

R. K. Narayan : The Guide

Mulk Raj Anand : Untouchable

Githa Hariharan : When Dreams Travels

Tabish Khair : The Bus Stopped

Recommended Readings:

M K Naik, Studies in Anglo Indian Fiction, Abhinav Publication

M K Naik, Indian English Fiction: A Critical Study, Pencraft

K Srinivasa Iyengar, Indian Writing in English, Sterling

M K Naik, A History of Indian English Literature, Sahitya Akademi

M K Naik & Shyamala Narayan, Indian English Literature; A Critical Survey 1980-2000, Pencraft

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

4. Two long answer type critical questions out of four alternatives on the texts prescribed.

2x15 = 30

5. Four short answer type questions out of eight alternatives from the texts prescribed.

4x05 = 20

6. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

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DSE1A - II - American Literature: Novel

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Nathaniel Hawthorne : The Scarlet Letter

F. Scott Fitzgerald : The Great Gatsby

Hemingway : The Old Man and the Sea

Toni Morrison : The Bluest Eye

Recommended Readings:

Richard Ruland & Malcolm Bradbury, From Puritanism to Post- Modernism: A History of American Literature, Penguin

Richard Gray, History of American Literature, Willey-Blackwell

Alfred Bendixen, The Development of American Novel: The Transformation of Genre, Willey-Blackwell

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

4. Two long answer type critical questions out of four alternatives on the texts prescribed.

2x15 = 30

5. Four short answer type questions out of eight alternatives from the texts prescribed.

4x05 = 20

6. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

Note: Students should study two papers of Discipline Specific Elective (DSE) in Fifth Semester. Students are required to make a choice between DSE 1A and DSE 1B and similarly between DSE 2 A and DSE 2 B.

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DSE 1B - I - Indian Writing in English: Poetry & Drama

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I: Poetry

Toru Dutt : Baugmaree

Rabindranath Tagore : Heaven of Freedom

Sarojini Naidu : The Palanquin Bearers

Nissim Ezekiel : The Night of Scorpion

Jayant Mahapatra : Reltionship

A K Ramanujam : On the Death of a Poem

Kamla Das : Words

Source Book:

An Anthology of Indian Poetry in English, Ed. By a Board of Editors, Orient Blackswan

Unit II: Drama

Girish Karnad : Tughlaq

Mahesh Dattani : Tara

Recommended Readings:

Bruce King, Modern Indian Poetry in English, Oxford University Press

Kaustav Chakraborty, Indian English Drama, Prentice Hall

K Srinivasa Iyengar, Indian Writing in English, Sterling

M K Naik, A History of Indian English Literature, Sahitya Akademi

M K Naik & Shyamala Narayan, Indian English Literature; A Critical Survey 1980-2000, Pencraft

DSE 1 B - II – American Literature: Poetry & Drama

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I: Poetry

Walt Whitman : Out of the Cradle Endlessly Rocking

Longfellow : A Psalm of Life

Robert Frost : i) Desert Places ii) Birches

Emily Dickinson : Hope is the Thing Sylvia Plath : Birthday Present

Langston Hughes : Let America Be America Again

Allen Ginsberg : Howl

Maya Angelou : On the Pulse of Morning

Source Book:

The Golden Treasury, Palgrave, Rupa& Co

Unit II: American Drama – Textual Readings

Tennessee Williams : The Glass Menagerie

Arthur Miller : All My Sons

Recommended Readings:

Richard Ruland & Malcolm Bradbury, From Puritanism to Post- Modernism: A History of American Literature, Penguin

Richard Gray, History of American Literature, Willey-Blackwell

Richard Gray, A History of American Poetry, Willey-Blackwell

Masud Ali Khan, *Modern American Drama*, Sublime Publications

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

6. One long answer type critical question out of four alternatives from the texts prescribed in Unit I.

1x15 = 15

7. One long answer type critical question out of four alternatives from the texts prescribed in Unit II.

1x15 = 15

8. Two explanations out of four alternatives from the texts prescribed in Unit I. 2x05 = 10

9. Two explanations out of four alternatives from the texts prescribed in Unit II. 2x05 = 10

10. Ten objective type questions. 10x02 = 20

Continuous Internal Assessment: 30 Marks

ACTING PRINCIPAL

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Kolhan University, Chaibasa

PG Department of English & Cultural Studies Courses of Study – B. A. Programme DSC MIL English

Effective From: 2020 – 2021

COURSE STRUCTURE

Semester I:

DSC MIL 1 : English MILI

Semester II:

DSC MIL I1 : English MILII

Semester III:

DSC MIL II1 : English MILIII

Semester IV:

DSC MIL IV : English MIL IV

Question Pattern and Marking Scheme:

Each course will be of the value of **100 Marks**. There will be a **ContinuousInternal Assessment 30 Marks**, an **End Semester Exam (ESE)** of **70 Marks**. The Continuous Internal Assessment will be based onMid Term Tests = 15 Marks, Assignments/Projects/Posters/Quiz/Seminar = 10 Marks and Classroom attendance and active participation with leadership qualities, good manners and articulation in routine class, instructional deliveries (case studies/seminars/presentations) = 05Marks,

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM



SEMESTER - I

English MIL 1

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

William Shakespeare : Sonnet 60

John Donne : A Hymn to God, the Father

Henry Vaughan : The Retreat

John Keats : Bright Star

Christina Rossetti : After Death

Philip Larkin : Wants

Source Book:

David Green, The Winged Word, MacMillan

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the poems prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives on the poems prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W. SINGHBHUM



SEMESTER - II

English MIL II

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

R K Narayan : The Guide

Kamala Markandaya : Nectar in a Sieve

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the novels prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives on the novels prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks



SEMESTER- III

English MIL I1I

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Girish Karnad : Tughlaq

Mahesh Dattani : Tara

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives on the texts prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

SEMESTER - IV





End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Mahatma Gandhi : My Experiment with Truth

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives on the texts prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives on the texts prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

KOLHAN UNIVERSITY, CHAIBASA

PG DEPARTMENT OF ENGLISH & CULTURAL STUDIES

Course of Study - B.A./B.Sc./B.Com. Honours & Programme

AECC 1 MIL Communication, EnglishSEMESTER-I

Effective from: 2020 – 2021

End Semester Exam: 35Marks Internal Assessment: 15 Marks

UNIT I: Writing Skills

Essay/Paragraph Writing: Narrative, Descriptive & Expository, Journalistic Report Writing/Feature Writing/Writing Reviews/Columns, Expansion of an Idea, Dialogue Writing/Writing based on a Situation, Formal/Business Letters, Job Applications, Biodata/Resume/Curriculum Vitae

UNIT II: Oral Skills (Public Speaking, Viva Voce, Interview, Group Discussion& Presentation)

Oral Communication: Definition, Types, Advantages & Limitations, Effective Public Speaking, Viva Voce; Definition, Scope and Purpose, What is Interview? Types of Interview, Effective Interviewing, Group Discussion: Definition, Rules, Scope and Objective, Presentation Skills, Types of Presentation Skill, Techniques of Presentation, Effective Presentation

Source Books:

Terry O'Brien, Modern Writing Skills, Rupa Publications

Pushp Lata & Sanjay Kumar, Communicate or Collapse: A Handbook of Effective Public Speaking, Group Discussion and Interviews, Prentice Hall

Recommended Reading:

Ramchandran & Karthik, From Campus to Corporate, Pearson Education

Gangadhar Joshi, Campus to Corporate: Your Roadmap to Employability, Sage Publication

Examination, Evaluation and Distribution of Marks:

End Semester: 35 Marks (1.5 Hours)

1. Two long answer questions out of Four alternatives on topics prescribed in Unit I.

2x10 = 20

2. Three short notes out of Eight alternatives from the topics prescribed in Unit 2.

3x05 = 15

Continuous Internal Assessment: 15 Marks

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Kolhan University, Chaibasa PG Department of English & Cultural Studies

Courses of Study – B.A. Honours (Excluding English Hons.)

English (Generic Elective) Effective from: 2020 – 2021

COURSE STRUCTURE

Semester I:

GE 1 : English GE I

Semester II:

GE I1 : English GEII

Semester III:

GE II1 : English GEIII

Semester IV:

GE IV : English GE IV

Question Pattern and Marking Scheme:

Each course will be of the value of **100 Marks**. There will be a **ContinuousInternal Assessment**of **30 Marks**, an **End Semester Exam (ESE)** of **70 Marks**. The Continuous Internal Assessment will be based onMid Term Tests = 15 Marks, Assignments/Projects/Posters/Quiz/Seminar = 10 Marks and Classroom attendance and active participation with leadership qualities, good manners and articulation in routine class, instructional deliveries (case studies/seminars/presentations) = 05Marks,

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W. SINGHBHUM

English GE I (Generic Elective I) English Poetry

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Unit I

William Shakespeare : Fear No More

John Donne : From Holy Sonnets No. 1

George Herbert : Virtue

Alexander Pope : Ode on Solitude

Thomas Gray : Hymn to Adversity

S T Coleridge : Dejection, An Ode

John Keats : Ode on a Grecian Urn

Matthew Arnold : Longing

Source Book:

David Green, The Winged Word, Macmillan

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives from the poems prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives from the poems prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

English GE II (Generic Elective II) English Drama

End Semester Exam: 70 Marks Internal Assessment: 30 Marks

G B Shaw : Arms and the Man

Girish Karnad : Hayvadan

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives from the plays prescribed.

2x15 = 30

2. Four short answer type questions of eight alternatives from the plays prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

English GE III (Generic Elective III) English Novel

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

Jane Austen:Pride and PrejudiceCharles Dickens:David Copperfield

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives from the novels prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives from the novels prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

English GE IV (Generic Elective IV) English Prose

End Semester Exam: 70 Marks

Internal Assessment: 30 Marks

UNIT I: Essays

Bacon : Of Friendship
Charles Lamb : Dream Children

Lucas : A Funeral

A. G. Gardiner : OnSuperstitions

UNIT I: Short Stories

Virginia Woolf : The Duchess and the Jeweller

R. N. Tagore : The Postmaster
R. K. Narayan : The Tiger's Claw

Ruskin Bond : The Eyes Are Not Here

Source Books:

D. Thakur (Ed) Selected Short Stories, MacMillan

Susanta K Sinha (Ed), English Essayists, OUP

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

1. Two long answer type questions out of four alternatives from the novels prescribed.

2x15 = 30

2. Four short answer type questions out of eight alternatives from the novels prescribed.

4x05 = 20

3. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

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Kolhan University, Chaibasa PG Department of English & Cultural Studies Courses of Study – B. A. Programme

English (Generic Elective)
Effective from: 2020 – 2021

COURSE STRUCTURE

Semester V:

GE 1: English GE I

Semester VI:

GE I1: English GEII

Question Pattern and Marking Scheme:

Each course will be of the value of **100 Marks**. There will be a **ContinuousInternal Assessment 30 Marks**, an **End Semester Exam (ESE)** of **70 Marks**. The Continuous Internal Assessment will be based onMid Term Tests = 15 Marks, Assignments/Projects/Posters/Quiz/Seminar = 10 Marks and Classroom attendance and active participation with leadership qualities, good manners and articulation in routine class, instructional deliveries (case studies/seminars/presentations) = 05Marks,

ACTING PRINCIPAL ST. AUGUSTINE'S COLLEGE MANOHARPUR, W SINGHRHUM

Kolhan University, Chaibasa PG Department of English & Cultural Studies Courses of Study – B. A. Programme

English GE I (Generic Elective I) English Poetry

End Semester Exam: 70 Marks Internal Assessment: 30 Marks

Unit I

William Shakespeare Fear No More

John Donne From Holy Sonnets No. 1

George Herbert Virtue

Alexander Pope Ode on Solitude

Thomas Gray Hymn to Adversity

Dejection: An Ode S T Coleridge

John Keats Ode on a Grecian Urn

Matthew Arnold Longing

Source Book:

David Green, The Winged Word, Macmillan

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

4. Two long answer type questions out of four alternatives from the poems prescribed.

2x15 = 30

5. Four short answer type questions out of eight alternatives from the poems prescribed.

4x05 = 20

6. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

T. AUGUSTINE'S COLLEGE

Kolhan University, Chaibasa PG Department of English & Cultural Studies Courses of Study – B. A. Programme

English GE II (Generic Elective II) English Drama

End Semester Exam: 70 Marks Internal Assessment: 30 Marks

G B Shaw : Arms and the Man

Girish Karnad : Hayvadan

Examination, Evaluation and Distribution of Marks:

End Semester: 70 Marks (3 Hours)

4. Two long answer type questions out of four alternatives from the plays prescribed.

2x15 = 30

5. Four short answer type questions of eight alternatives from the plays prescribed.

4x05 = 20

6. Ten objective type questions.

10x02 = 20

Continuous Internal Assessment: 30 Marks

KOLHAN UNIVERSITY, CHAIBASA

PG DEPARTMENT OF ENGLISH & CULTURAL STUDIES

Course of Study-B.A. Honours & Programme

SEC 1, 2, 3, & 4

Effective from: 2020 – 2021

SEC 1 – SEMESTER 3 **English SEC I (Skill Enhancement Course I)**

English for Academic Purpose

Unit I: Definition and Scope of English for Academic Purposes/ Study Skills;

Characteristics of Academic English.

Unit II: (A) Academic Reading: Reading Academic Texts; Inferencing; Critical

Reading; Skimming and Scanning; Using Reference Sources

(B) Academic Writing Skills: Abstracting and Summarizing; Paraphrasing; Writing Long Papers and Academic Reports; Preparing a Bibliography

Source Books:

Glandinning and Holmstrom: Study Reading

Nolan - Uoods and Fall: Penguin Advanced Reading Skills

Arthur Brooks and Peter Grundy: Writing for Academic Purposes

J. A. Discoll: Penguin Advanced Writing Skills

Taya Zinkin: Write Right

Examination, Evaluation and Distribution of Marks:

End Semester: 35 Marks (1.5 Hours)

1. One long answer type question out of two alternatives on the topics prescribed.

 $1 \times 15 = 15$

 $2 \times 05 = 10$ 2. Two short notes out of four alternatives on the topics prescribed.

3. Ten objective type questions. $10 \times 01 = 10$

Continuous Internal Assessment: 15 Marks

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SEC 2 – SEMESTER 4 English SEC II (Skill Enhancement Course II)



English for Business

- Unit I: Business Communication: Language of Business: Tone, Style, Ambiguity, Glossary of Business Terms.
- Unit II: (A) Business Writings:Basic Principles, Format and Types, Report Writings, Periodic Reports and Market Survey Reports.
 - (B) External Communication: Press Releases and Notices Inviting Tender, Bid and Auction, Fax Messages and e-mails.

Source Books:

Davis Cotton, World of Business

Andrew Little John, Company to Company, (Business Correspondence)

Pearsall and Cunningham, How to Write for the World of Work

Michael Paine, English Commercial Correspondence

B. Elizabeth Pryse, The Perfect Secretary

David Kessidge, Basic Bussiness Role Plays

Examination, Evaluation and Distribution of Marks:

End Semester: 35 Marks (1.5 Hours)

1. One long answer type question out of two alternatives on the topics prescribed.

 $1 \times 15 = 15$

2. Two short notes out of four alternatives on the topics prescribed. $2 \times 05 = 10$

3. Ten objective type questions. $10 \times 01 = 10$

Continuous Internal Assessment: 15 Marks

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SEC 3 – SEMESTER 5

English SEC III (Skill Enhancement Course III)

English in Print Media

- Unit I: Role of Language in Print Media; Definition of News; Difference between News and Information: News and Ideas
- Unit II: Objective Reporting; Interpretative Reporting; Investigative Reporting; Entertainment Reporting; Writing Interviews; Writing Features (Cartoons, Photo Features etc.); Writing Leads, Writing Editorials

Source Books:

- R. Parthasarthy, Basic Journalism
- R. J. Hall, Basic Training in Journalism
- D. Wainwright, Journalism Made Simple

Examination, Evaluation and Distribution of Marks:

End Semester: 35 Marks (1.5 Hours)

1. One long answer type question out of two alternatives on the topics prescribed.

 $1 \times 15 = 15$

- 2. Two short notes out of four alternatives on the topics prescribed. $2 \times 05 = 10$
- 3. Ten objective type questions. $10 \times 01 = 10$

Continuous Internal Assessment: 15 Marks

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SEC 4 – SEMESTER 6

English SEC IV (Skill Enhancement Course IV)

English in Electronic Media

Unit I: Defining Mass Communication, Barriers to Communication

Unit II: (A) Language in Media, Accuracy vs Fluency; Appropriacy, Context, Abstractness.,

(B) Writing for the Broadcast Media, News Writing and Editing, Creating Advertisements for Radio and Television, Writing Script, Scripting Select Programs for Radio/TV: Documentaries, Features, Interviews,

Source Books:

- S. P. Jain, The Art of Broadcasting
- C. Warren, Radio News Writing and Editing
- G. Millewrson, The Techniques of TV Production

Andrew Boyd, Broadcasting Journalism

Rober Mcleish, The Technique of Radio Productions

Weston and Holt, Writing TV and Radio Programmes

Examination, Evaluation and Distribution of Marks:

End Semester: 35 Marks (1.5 Hours)

1. One long answer type question out of two alternatives on the topics prescribed.

 $1 \times 15 = 15$

- 2. Two short notes out of four alternatives on the topics prescribed. $2 \times 0.05 = 10$
- 3. Ten objective type questions. 10x02=20
- 4. Continuous Internal Assessment: 15 Marks

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