

# CHINMAYA DEGREE COLLEGE BHEL, HARIDWAR

Criterion I-Curricular Planning and Implementation

# 1.1 Curricular Planning and Implementation

1.1.1 The Institution ensures effective curriculum planning and delivery through a wellplanned and documented process including Academic calendar and conduct of continuous internal Assessment

# **Documents Attached**

Sr.	Document Name
No.	
1.	Prospectus
2.	Academic Calendar
3.	Time -Table
4.	Teaching Plan
5.	Laboratory and Library Facilities
6.	Internal & External Date sheet and Duty chart



# Prospectus last five year

# A COLLEGE OF EXCELLENCE



# PROSPECTUS Session 2018-19

BHEL, HARIDWAR - 249403

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# BHEL, HARIDWAR - 249403 A COLLEGE OF EXCELLENCE



# **PROSPECTUS**

Session 2019-20

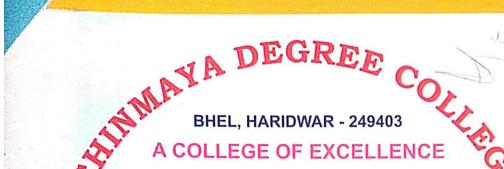
Ph.: 01334 - 230478, Fax: 01334 - 231892

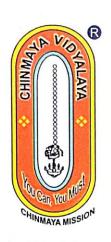
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# **PROSPECTUS**

**Session 2020-21** 

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# BHEL, HARIDWAR - 249403 A COLLEGE OF EXCELLENCE



# **PROSPECTUS**

**Session 2021-22** 

Ph.: 01334 - 230478

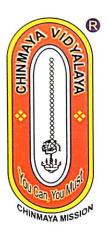
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BHEL, HARIDWAR - 249403
A COLLEGE OF EXCELLENCE



# **PROSPECTUS**

Session 2022-23

Ph.: 01334 - 230478

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# **Academic Calendar**

# ACADEMIC CALENDAR SESSION 2022-23

(Approved by the Admission Committee meeting held on 20.06.2022)

Date of Registration for admission to UG and PG classes, First Semester	Within 15 days of declaration of the CUET result.
Commencement of the academic session/classes of UG First Semester of all courses	From 05.09.2022
Last date of admission to UG/PG/Diploma Courses for all semester excluding first semester	30.08.2022
Last date of submission of examination form for the odd semester of all courses	From 01.10.2022 to 30.10.2022  OR  Within twenty (20) days of the University declaring the previous classes results, whichever is earlier. The same date shall apply to students for re-admission.
Last date of submission of examination form for the even semester of all courses	From 15.03.2023 To 15.04.2023
Course duration (including examinations) for all UG, PG, Professional & Vocational courses	
(a) Odd Semester	05.08.2022 to 01.01.2023
	17.01.2023 to 05.06.2023
Winter Break	02.01.2023 to 16.01.2023
(b) Even Semester  Winter Break  Summer Break	06.06.2023 to 08.07.2023
University Convocation Day	01.12.2022
Golden Jubilee Celebration of H.N.B. Garhwal University begins from	01.12.2022
Birth Anniversary Celebration of Late Shri Hemvati Nandan Bahuguna	25.04.2023

Note: The dates mentioned above are tentative. They are subject to change as per the declaration of the CUET result.

All departments of the Campuses to submit the Annual Report to IQAC by the first week
of May.

2. All departments of the Campuses shall conduct Orientation/Induction programme for the newly admitted PG students within one week of the commencement of classes and submit the report to IQAC. Dean of Schools to facilitate the same for UG programmes.

Therebys Degree College May Th



18.08.2021

01.12.2021

25.04.2022

### ACADEMIC CALENDAR SESSION 2021-22 (Approved by the Admission Committee meeting held on 23.07.2021)

1.	Date of start of online registration for admission	18.08.2021
2.	Last date of registration for admission to BA/B.Sc./B.Com. (First Semester	08.09.2021
3.	Commencement of the academic session/classes	16.09.2021
4.	Last date of admission to UG/PG/Diploma courses all semester excluding I	BA/B.Sc./B.Com first
٦.	semester	30.09.2021
	OR	
	Within twenty (20) days of declaration of the result of entrance tes	t/qualifing examination,
	whichever is later.	
5.	Last date of submitting examination form for odd semester, all courses 15.0	9.2021 to 01.10.2021
	OR	
	Within twenty (20) days of issuing of mark sheet of the previous class by the	e University, whichever
	is later. The same date will be applicable to the students of re-registration.	
6.	Last date of submitting examination form for even sememster, all courses 15	.02.2022 to 28.02.2022
7.	Course duration (including examinations) for UG, PG, Professional & Voca	tional courses
	(a) Odd Semester 16.09.202	21 to 25.01.2022
	(b) Even Semester 27.01.202	22 to 19.06.2022
8.	William Diedit	21 to 01.01.2022
9.	Summer Break 20.06.202	2 to 19.07.2022

Note:1. All the departments of the Campuses to submit the Annual Report to IQAC latest by the first week of May, 2021

2. All the departments of the Campuses shall conduct Orientation / Induction programme for the newly admitted PG students within one week of the commencement of classes and submit the report to IQAC. Dean of Schools to facilitate the same for UG programmes.

> Chinmaya Degree College BHEL, Haridwar

10. University Foundation Day Celebration and University Convocation Birthday ceremony celebration of Late Shri Hemvati Nandan Bahuguna



PROSPECTUS 2020-2021

### ACADEMIC CALENDAR SESSION 2020-21

(Approved by the Admission Committee meeting held on 11.05.2020)

20.07.2020 onwards 1. Sale of admission forms 01.08.2020

2. Commencement of the academic session 20.08.2020

(a) Last date of submitting admission forms for B,A/B,Sc/B,Com, and all UG Courses.

(b) Last date of submitting admission forms for all PG Courses.

20.08.2020

Within twenty (20) days of declaration of the result of entrance test/qualifing examination, whichever is later.

(c) Last date of submitting and filling of examination form for Odd Semester of all the classes

15.09.2020

OR

Within twenty (20) days of issuing of mark sheet of the previous class by the University, whichever is later. The same date will be applicable to the students of re-registration.

Course duration (including examinations) for HG PG Professional & Vocational courses

٦.	Course duration (including examinations) for	U(1, PO, Professional & Toenton	ai common	
	(a) Odd Semester		01.08.20201	1025.01.2021
	(b) Even Semester		27.01.20211	1025.06.2021
5.	Winter Break		24.12.20201	to 31.12.2020
6.	Summer Break		26.06.2021	to 24.07.2021
7	(i) All U.G., P.G. & P.G. Diploma Courses	s (Odd Semester)		
	(a) Commencement of classes		1 1 mm	01.08.2020
	(b) Date for submitting online examination I	forms (except first semester)	01.09.2020	to 15.09.2020

(c) Commencement of End Semester examinations (UG/PG)\* 01.01.2021 to 25.01.2021

(ii) All U.G., P.G. & P.G. Diploma Courses (Even Semester)

(a) Commencement of classes 27.01.2021 (b) Date of submitting online examination forms 15.02.2021 to 02.03.2021

(c) Commencement of End Semester examinations (UG/PG)\* 26.05.2021 onwards

University Foundation Day Celebration and University Convocation 01.12.2020

Birthday ceremony celebration of Late Shri Hemvati Nandan Bahuguna 25.04.2021

\* All the HODs to ensure that the sessional exams will be completed before one week of commencement of the end semester examination and it is mandatory to submit sessional awards immediately to the Controller of Examinations.

1. All the departments of the Campuses to submit the Annual Report to IQAC latest by the first week of May, 2021

2. All the departments of the Campuses shall conduct Orientation / Induction programme for the newly admitted PG students within one week of the commencement of classes and submit the report to IQAC. Dean of Schools to facilitate the same for UG programmes.

HNBGU, Srinagar Garhwal (A Central University)



### प्रवेशार्थी-निर्देशिका २०१८-२०१९

# क्षिणिक कलैण्डर सत्र २०१८-१९

# वेश समिति की बैठक दिनांक 16.04.2018 द्वारा अनुमोदित)

प्रवेश फार्म वितरण प्रारम्भ की तिथि	11.06.2018
शैक्षिक सत्र आरम्भ की तिथि	17.07.2018
(अ) बी०ए० / बी०एस-सी० / बी०काम० एवं समस्त रनातक पाठ्यक्रमीं (प्रथम सेमेस्टर	र) में
प्रवेश आवेदन पत्र जमा करने की अन्तिम तिथि	10.07.2018
(ब) समस्त स्नातकोत्तर कक्षाओं (प्रथम सेमेस्टर) में प्रवेश फार्म जमा कर्ने की अन्तिम	तिथि 01.08.2018
अथवा	
प्रवेश / अर्हकारी परीक्षा के परीक्षाफल घोषित होने के 20 दिनों के अन्तर्गत (जो भी बाद	में हो)
(स) समस्त सेमेस्टर कक्षाओं में प्रवेश आवेदन एवं प्रथम सेमेस्टर में परीक्षा फार्म भरने व	
या ५	
विश्वविद्यालय द्वारा पूर्व परीक्षा के अंक पत्र निर्गत होने की तिथि से 20 दिनों के अन्तर्गत	(जो भी बाद में हो)
स्नातक, स्नातकोत्तर, व्यावसायिक एवं वोकेशनल (परीक्षा सहित) पाठ्यक्रमों की अवधि	
(अ) विषम सेमेस्टर	20.07.2018 से 31.12.2018
(ब) सम सेमेस्टर	16.01.2019 से 31.05.2019
शीतकालीन अवकाश	01.01.2019 से 15.01.2019
ग्रीष्मकालीन अवंकाश	03.06.2019 से 16.07.2019
<ul> <li>सभी स्नातक, स्नातकोत्तर एवं स्नातकोत्तर डिप्लोमा पाठ्यक्रम (विषम सेमेस्टर)</li> </ul>	
(अ) शिक्षण कार्य आरम्भ की तिथि	20.07.2018
(ब) ऑन लाइन परीक्षा फार्म जमा करने की तिथि (प्रथम सेमेस्टर को छोड़कर)	01.09.2018 से 15.09.2018
<ul><li>(स) स्नातकोत्तर / स्नातक सेमेस्टर लिखित परीक्षा की तिथि*</li></ul>	01.12.2018
i) समी स्नातक, स्नातकोत्तर एवं स्नातकोत्तर डिप्लोमा पाठ्यक्रम (सम सेमेस्टर)	
(अ) शिक्षण कार्य आरम्भ की तिथि	16.01.2019
(ब) ऑन लाइन परीक्षा फार्म जमा करने की तिथि	01.02.2019 से 15.02.2019
<ul><li>(स) स्नातकोत्तर ∕ स्नातक समेस्टर लिखित परीक्षा की तिथि<sup>*</sup></li></ul>	01.05.2019
विश्वविद्यालय स्थापना दिवस एवं दीक्षान्त समारोह	01.12.2018
स्वर्गीय श्री हेमवती नन्दन बहुगुणा जन्म दिवस समारोह	25.04.2019

\*सभी विभागाध्यक्ष यह सुनिश्चित करें कि समस्त सेशनल / आंतरिक परीक्षाएं सत्रान्त सेमेस्टर परीक्षाओं के प्रारम्भ तिथि से एक सप्ताह पूर्व सम्पन्न हो जानी चाहिए तथा मूल्यांकन प्रपत्र आवश्यक रूप से परीक्षा नियंत्रक को जमा करें।

- 2-1. सभी परिसरों के विभाग अपनी वार्षिक प्रगति आख्या को मई 2019 के प्रथम सप्ताह तक आवश्यक रूप से आई0क्यू0ए0सी0 को जमा कर दें।
- 2. सभी परिसरों के विभाग कक्षायें शुरू होने के एक सप्ताह के अन्दर नव प्रविष्ट स्नातकोत्तर विद्यार्थियों के लिए ओरियन्टेशन/इन्डक्शन प्रोग्राम का आयोजन करके उसकी आख्या आई०क्यू०ए०सी० को प्रेषित कर दें। सभी स्कूलों के संकायाध्यक्ष रनातक कक्षा के प्रवेशार्थियों के लिए भी यही सुविधा सुनिश्चित करें।

61



# **Time Table**



Hours

AA7/22



	NTHEM: 10:30 A	M				-	
Class/Period	1	11	111	IV		The state of the s	NAL SONG : 2:0
	9:00 - 9:45	9:45-10:30	10:40 -11:25	11:25 - 12:10		V	VI
B.Sc. 1st MATHS	Chemi(1-4) [33] 1.2 - AS 3.4 - A	Math(1-4) [33] 1.2-AG 3,4-SG	Phy (1-4) [33] 1.2 – PKS 3,4 -BPG	Maths (3-6) [33] 3,4-x 5,6-5G Eng (1-2)		1	01: 15 – 02 PM ractical 3 5 ch H-BPG Batch-III PK
3.Sc. 1st 3/O		(1-A) [15] 1.2 - AK 3.4 - PR	Eng [5-6]	[33] Bot (1-4) · [15] 1,2 - M 3,4 -AD		BOT Batch-1-M Ba	(actica) 3 5 (ch-li-AD Batch-lit At) (ch-lil-PR Batch-li AK
5.5c. 3rd MATHS	Maths (3 -6) [16] 3,4-X 5,6-AG	PHY{3-6} [16] 3, 4- PKS 5, 6- BPG	Phy Batch 1-BPG Batch	ractical 5 5 -II-PKS Batch -III- BPG/PKS	LUNCH	Maths (3 -6) [16] 3-X 4-AG 5,6-SG	Chem. (3-6) [16] (3.4-23-5,6-6) SES. (2-2)
8.Sc. 3rd 9IO.	Bot (3-6) [28] 3,4 - M 5,6 - AD	5-A	1 BOT Batch-1M/AD Bai Zoo Batch II-AK Batch	ractical 3 5 tch-II-AD/M Batch-III-AD ch-III-AK Batch-I-PR, latchi-S Batch II-AS	BREAK	Zoo ( 3-6) [28] 3,4- AK 5,6- PR	
B.Sc. 5 th MATHS	Phy Batch-1-PKS Ba	Practical 5 3 5 satch-II-BPG Batch-III-PKS Batch-III-S Batch-I-AS	Maths ( 1-4) [16] 1,2-SG 5,6-AG	Maths (1,2,5,6) [16] 1-AG 2,5,6-X		Phy (1-4) [33] 1,2,3-PKS SEC(5,6) [33]	Chem[1/4] - [33] - [, 2, 3-3] - (4, A
8.Sc. 5 th ВЮ.	1 BOT Batch-1-M B Zoo Batch II-PR Ba	Practical 5 3 5 atch-III-AD Batch-IIII-M atch-III-AK Batch II-PR Batch III-A Batch III-S	Bot (1-4) [28] 1,2 - AD 3,4 - M	Zoo(1-4) [28] 1-4 – PR SEC (5-6) X [28] 5,6- AK		4,5,6 - BPG  Chern (1-4)  [28]  1, 2, 3-51	



# CHINMAYA DEGREE COLLEGE BHEL, HARIDWAR

Class/Period	1	II .		III	NATIONAL SC	I I	v		
classyreriou	9 - 9:55 am	9:55 – 10:50 am		11 –11:55 am	11:55 – 12:50 pm	1 1	1:10 -2:05pm	VI 2:05 –3 pm	
c. I <sup>st</sup> ATHS	Chem (1-4) 1, 2 - AS 3, 4 - AA [33]	Maths (1-4) X [33]	N A	Phy (1-4) 1, 2 - PKS 3, 4 - BPG [33]	Maths (3 -6) X ENG (1-2) - X [33]	L U	Lab Practical  1 3 5 Phy Batch-I BPG Batch-III PKS Chem Batch-II AS Batch-III X Batch-I AS		
Sc. Ist		Zoo (1-4) 1, 2 - AK 3, 4 - X [15]	2 - AK 4 - X	Chem [1-4] 1, 2 - AS 3, 4 - AA ENG [5-6] - X [15]	Bot [1-4] 1, 2 - M 3, 4 - X [15]	N C	1 Bot Batch-I M I Zoo Batch-II X B	Practical 3 5 Batch-II X Batch-III X latch-III AK Batch-II X Batch-I AA Batch-II X	
Sc. III <sup>rd</sup> ATHS	Maths (3-6) X [8]	3, 4 - PKS 5, 6 - BPG [8]		1 Phy Bat-I BPG Bat-	ractical 3 5 -II PKS Bat-III BPG,PKS Batch-III X Batch-I AS	н	Maths (3 - 6) X [16]	Chem (3 - 6) 3, 4 - AS 5, 6 - AA SEC (1-2) - X [16]	
Sc. III <sup>rd</sup>	Bot (3 -6) 3, 4 - X 5, 6 - M [28]	Chem (3 -6) 3, 4 - AS 5, 6 - AA SEC (1-2) X [28]	L A	3, 4 - AS 5, 6 - AA SEC (1-2) X	1 Bot Batch-IX Ba Zoo Batch-II AK E	Practical 3 5 tch-II M Batch-III M Batch-III AK Batch-I X Batch-I X Batch-II AA	B R	Zoo (3- 6) 3 - X 4,5,6 - AK [28]	
.Sc. V <sup>th</sup> MATHS	1 Phy Bat-I PKS B	Practical 3 5 at-II BPG Bat-III PKS A Batch-III X Batch-I AS	N T	Maths (1-4) X [8]	Chem(1 -4) 1,2 - X 3,4 - X [8]	E A	Maths (1-4) X [8]	Phy (1-4) 1,2,3 - PKS 4 - BPG SEC (5-6) - BPG [8]	
3.Sc. V <sup>th</sup>	1 Bot Batch-I M E Zoo Batch-II X Ba	Practical 3 5 Batch-II M Batch-III X stch-III AK Batch-I X,AK ( Batch-I X Batch-I X	H E M	Chem (1-4) 1, 2 - X 3, 4 - X [Seminar Hall]	Zoo (1 - 4) 1,2 - X 3, 4 - AK SEC (5-6) - X [Seminar Hall]	к	Bot (1-4) 1, 2 · X 3, 4 · M [Seminar Hall]		
HYSICS	(	CHEMISTRY		MATHEMATICS Vacant M - Dr	BOTANY . Manisha	X - Vacant	ENGLISH  AK - Dr. Ajay Kumai	ZOOLOGY	

PRINCIPAL



PHYSICS
OK - Dr. Om Kant
MM - Mrs Meenu Malik
AD - Mr. Amardeep

JT - Ms Jagriti Tyagi

ST - Ms Shivani Tyagi

Dr. A.S.Singh Mr. Hitesh Pujari

CHEMISTRY RC - Dr. Ruchira Chaudhary GB - Mrs. Geeta Badola KC - Ms Kamna Chauhan

ZOOLOGY SV - Dr. Sandhya Vaid SG - Dr. Shikha Gaur S - Ms Shaily BOTANY

MATHEMATICS D - Dr. Deepika Upadhyay NC - Dr Nidhi Chauhan HS - Mr. Himanshu Singh SG - Mrs. Surbhi Gupta HS - Ms Himani Sharma AT - Ms Aarti Thakur

VDS - Dr. V.D Sharma SK - Mr. Santosh Kumar HP - Mr. Hitesh Pujari AC - Mr. Ankur Chauhan

MICROBIOLOGY

RN- Rishabh Narayan

COMPUTER SC.

MS - Dr. Madhu Sharma

ENGLISH X- Vacant

SFS DIRECTOR









				A DEGREE COLLEGE B		020				
NATIONAL ANTHE	M: 10: 30 AM			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		_	TIONAL SONG : 2 PI	М		
Class/Period	ı	11		III	IV		V	VI		
Class/Period	9 - 9:45 am	9:45 – 10:30 am	1 1	10:40 -11:25 am	11:25 – 12:10 pm	1	12:30 -1:15pm	1:15 – 2 pm		
S.Sc. lst COMP. SC	Phy (1-4) 1,2 - AD 3,4 - JT [14]	Maths (1 – 3) SG [14]	N A	Comp (3-6) VDS [14]	Maths (4-6) HS ENG [1-2] [14]	L	2 Phy Batch-I ST Ba Comp Batch-II VDS Ba	tch-III RS Batch-I VDS	\ A	
B Sc Ist MICRO		Micro(1,3,5) D [16]	1 1 0	Bot (1,3,5) MS - 1,3 [16]	Zoo (1,3,5) S ENG [5-6] [16]	N C		4 6	ı	
B.Sc. III <sup>rd</sup> COMP. SC.	Maths (3-6 ) 3, 4 - HS 5, 6 - SG [10]	Comp.Sc.(3-6) AC [10]	N A	Lab Practical 2 4 6 Phy Batch-I AD Batch-II MM Batch-III JT Comp Batch-II AC Batch-III AC Batch-I RN			Phy (3-6) 3,4 - MM 5,6 - JT [14]	Maths (1-2 ) 1 - HS 2 - SG [14]	N	
B.Sc. III <sup>rd</sup> MICRO	Micro (1.3) AT SEC (5) NC [7]	Bot (1,3,5) MS- 3,5 ENG [5-6] [7]	L	Micro AT Batch-III Batch-I Batch-II Bot MS Batch-II Batch-III Batch-I 1 3		B R	Zoo (1,3,5) SG (15)		L	
B.Sc. V <sup>th</sup> COMP. SC.	2 Phy Batch-I MM	Practical 4 6 Batch-II ST Batch-III OK Batch-III SK Batch-I HP	N T	Maths (1-4) 1,2 - SG 3,4 - HS [7]	Phy SEC (1-2) 1 - OK 2 - ST 3-6 AD [7]	E	Comp Sc (3-6) Sκ [7]		s	
B.Sc. V <sup>th</sup> MICRO	Lab 2 Bot MS Batch Micro HS Batch 1 Zoo SV Batch	-III Batch-I Batch-II 3	H E M	Micro (1-4) 1, 2 - D 3, 4 - HS [10]	Bot (1 -4) MS (3,4) [10]	к	Zoo (1-4) SEC (5,6) S [10]		C	



8 Phy / Chem Practical E Chem (1-4) 1,2,3 4 GB AA Maths (1 -4) SG Maths SEC (5-6) SU Phy (1-4) 1-2 MM 3-4 ST {14} Math (1-4) 1-3 HI 4 SU B.Sc. 6<sup>th</sup> MATHS 1-2 3-4 5 6 PKS AD BPG JT AS X1 AS G M [16] [14] Bot /Zoo / Chem Practical Chem (1- 4) 1,2,3 4 GB AA [Exam Hall] Bot (1-4) 1-2 A 3-4 M Bot(SEC) 5-6 A 1-2 M 5 3 - 4 MS 200 (1 -4) B.Sc. 6\* 1-4 - S [Seminar Hall] 5 5V [Seminar Hall] GB AA Maths (3 -6) Phy (3-6) 3-4 OK 5-6 AD Comp SEC (1-2) - HP Phy/Comp Practical Comp (3-6) Maths (3-6) 1 - 2 3 - 4 5-6 PKS ST MM JT MM HP HP SK SK B.Sc. 6th 3-4 HI 5-6 SU SG [7] COMP. Sci. [7] [7] [7] Bot/Zoo/Micro Practical 5 - 6 A S SV Micro (1-4) D 1-2 M S Bot. (1 -4) 1-2 A 3-4 M [Seminar Hall] Zoo (1-4) 1-4 - S [Seminar Hall] 3-4 B.Sc. 6<sup>th</sup> MICRO Micro SEC(5-6) NC [10] 4-6 NC 1-3 DU COMPUTER SC. MICROBIOLOGY COI ka Upadhyay VDS - Dr. V.D Sharma Chauhan AC - Mr. Ankur Chauhan CHEMISTRY MATHEMATICS PHYSICS ZOOLOGY D - Dr. Deepika Upadhyay NC - Dr Nidhi Chauhan HS - Mr. Himanshu Singh AK - Dr. Ajay Kumar SV - Dr. Sandhya Vaid SG - Dr. Shikha Gaur SG - Dr. Shikha Gupta SU - Mrs. Surbhi Gupta PKS - Dr. P.K.Sharma BPG - Mr. B.P.Gupta AA - Dr. Alok Agarwal AS - Dr A. S. Singh HP - Mr. Hitesh Pujari SK - Mr. Santosh Kumar OK - Dr. Om Kant RC - Dr. Ruchira Chaudhary HI - Ms Himani Sharma MM - Mrs Meenu Malik AG - Mrs Anshu Gupta AS - Mr Anshul Sharma AT - Ms Aarti Thakur M - Dr. Manisha MS - Dr. Madhu Sharma AD - Mr. Amardeep JT - Ms Jagriti Tyagi ST - Ms Shivani Tyagi GB - Mrs. Geeta Badola KC - Ms Kamna Chauhan S - Ms Shaily A - Ms Aradhana Dr.A.S.Singh Principal

1.2 / - 10. 1381 VA

Mr. Hitesh Pujari



.

CHINMAYA DEGREE COLLEGE BHEL, HARIDWAR (EVEN SEMESTER ) TIME TABLE (w.e.f. 7.02.2020) NATIONAL ANTHEM: 10:00 AM NATIONAL SONG: 2:05 PM VIII 3:10 -04:10 8:00 - 9:00 2:10 -03:10 10:05 -11:05 11:05 - 12:05 12:05 -01:05 01: 05 -02:05 sctical 5-6 JT RC Chem (1-4) Maths (1-4) Phy (1-4) 1-2 BPG Maths (3 -6) 3-4 SU 5-6 SG Phy/Chem Pro N B.Sc. 2<sup>nd</sup> 1-2 AA 3-4 AS 1-2 HI 3-4 SU MATHS N BPG AA PKS AS 3-4 PKS ENV (1-2) [14] [14] [14] [14] A CHEM/BOT/ZOO LAB S 6 GB AG MS Bot [1-4] Zoo [1-4] 3 4 KC RC Chem [1-4] A 1-2 X 1-2 AK 3-4 AS ENV [5-6] B.Sc.2nd 1-2 AA 3-4 AS 1-2 M 3-4 MS T BIO [15] [15] [15] T Maths(1,2,5,6) 1 Maths (3-6) Phy (1-4) Phy / Comp Practical Comp (1 – 4) VDS [33] 5-6 JT RN 3-4 MM RN 3-4 SG 5-6 SU ENV [1-2] B.Sc. 2<sup>nd</sup> 1-2 HI 5-6 SU 1-2 ST 3-4 PKS 1-2 PKS COMP. Sci. 0 VDS [33] [33] [33] Bot/Zoo/ Micro Practical
1-2 3-4 5 - 6
A M M A
SV AK AK S 0 Bot (1-4) Zoo (1-4) Micro(1-4) 1-2 M 3-4 MS B.Sc 2 MICRO N HS [28] 1-2 AK 3-4 AS N ENV [5-6] | ENV [5-4 | [28] | Phy / Chem Practical | 1-2 | 3-4 | 5-6 | OK | AD | BPG | X1 | X1 | AA | [28] A Maths (3 - 6) 3 SU 4 HI 5-6 SG Chem (3 - 6) 3-5 KC 6 AS Phy (3-6) A Maths (3 -6) B.Sc. 4<sup>th</sup> MATHS 3-4 BPG 3-4 HI [16] 5-6 PKS L Maths SEC(1-2) SU [16] L [16] [16] Chem (3 -6) 3-5 6 KC AS [28] Zoo (3- 6) Bot (3 -6) 3-4 A 5-6 M 3-4 SV 5-6 AS [28] B.Sc. 4<sup>th</sup> BIO Bot (SEC 1-2) MS KC X1 A [33] AS Phy / Comp Practical 1-2 3-4 5-6 AD OK ST - AC -Maths (3-6) 3-6 HI Maths SEC (1-2) SU [8] Maths (1,2,4,5) Phy (3-6) 3-4 BPG 5-6 PKS Comp.Sc.(3-6) 1-2 SG 4 SU 5 H N R Sc 4th AC [8] 5 COMP. Sci. [8] [8] T Bot/Zoo/ Micro Practical
1 - 2 3 - 4 5 - 6
A M M A
AS AK AS Zoo (1 -4) Bot (3-6) 0 3-4 A 5-6 MS Bot [SEC 1-2] M 1 - 2 SV 3 - 4 AK AT [8] B.Sc. 4<sup>th</sup> н MICRO [8] [7] N

~ / > / 15/8/4x



ASS	8:55-9:40 AM	9:40-10:25 AM	10:25-10:30 AM	10:35-11:15 AM	11:15-12 PM	12-12:45 PM	12:45-01:30 PM
SC. I SEM			N A T	R.No15 chem(1-4)		(1,2 ) AS (3,4	200000
SC. I SEM		R.No16 chem(1-4) AS AA	0 N			(1,2 ) AA 3,4	
B.SC. III SEM MATHS	R.No7 chem(3-6) Sec (1,2) (1,2) KC (3,4)AA (5,6) AS		A L A	1,2	M LAB 3,4 5,6 AA		
B.SC. III SEM BIO			N T H E	1,2 KC	EM LAB 3,4 5,6 AS	R.No8 . chem(3-6) Sec (1,2) (1,2) KC (3,4)AA (5,6) AS	
B.SC. V SEM	(1,2) (3,	4) (5,6)	M		R.No28 chem(1-4) (3,4)KC, (1,2)X1		
B.SC. V SEN		/ LAB				R.No 16 CHEM(1-4) (1,2)X1 (3,4)KC	

ABOY



### CHINMAYA DEGREE COLLEGE, BHEL, HARIDWAR **TIME TABLE: 2019-20**



				TIME TABLE	2:2019-20		*		-
Class/Period	8:55 - 9:40	ll 9:40 –10:25	10:25- 10:30	III 10:30 –11:15	IV 11:15 – 12:00	V 12:00 -: 12:45	VI 12: 45 –01:30	1:30-1:35	VII 1:35- 2:20
B.Sc. 1≅ Sem. (MATHS Gr.)	Phy (1-4) [15] 1- PKS 2, 3 – BPG 4 AD		Phy./ Chem. Practical 1,2- PKS 3,4 - BPG 5,6 -MM		N A	E X T R			
3.Sc. 1st Sem. COMP. Sci. Gr.)			T I	Phy./ Comp. 1,2, - F 3,4 – A 5 – A 6- PK	PKS D D	Phy (3-6) [14] 3,4 – PKS 5,6 – AD		T I	C U
B.Sc. 3 <sup>™</sup> Sem. (MATHS Gr.)		Phy. (3-6) [7] 3,4 –BPG 5,6 - PKS	N A	Phy. / Chem Practical  1,2- BPG 3,4 - MM 5,6 - ST				N A	R R I C U
B.Sc. 3 <sup>rd</sup> Sem. (COMP. Sci. Gr.)	1,2 3,4	np. Practical P- ST - JT - AD	L A	Phy. (1-4) [10] 3,4 - PKS 1,2 - MM				L S	L A R
B.Sc. 5th Sem. (MATHS Gr.)	1,2 3,4 -	Phy. / Chem. Practical 1,2- OK 3,4 – PKS 5,6 -BPG					Phy.(1-4) SEC (5-6) [28] 1,2,5 – BPG 3,4 – AD 6 – OK	0 N	A C T I V
B.Sc. 5 <sup>th</sup> Sem. (COMP. Sci. Gr.)			H E M	Phy.(1-4) SEC (5-6) [33] 1,2- JT 3,4 – JT 5 – PKS 6 – JT			/Comp. Practical ,4 – JT 5,6- PKS	G	T I E S

PKS- Dr. P.K. SHARMA BPG- Sh- B.P. GUPTA OK- Dr. OM KANT MM- Mrs. MEENU MALIK

AD- Dr. AMAR DEEP JT- Ms. JAGRITI TYAGI ST- Ms. SHIVANI TYAGI

Head Dept. of Physics Verinmaya Degree College BHEL, Ranipur Hardwa



,				CHINMAYA	DEGREE COLL	EGE HARIDWA	AR	TIME TA	BLE JULY.	DEC 2019	
ASS	8:55-9:40AM	9:40-10:25AM	10:25-10:30	10:35-11:15AM	11:15-12PM	12-12:45PM	12:45-1:30PM	1:30-1:35	1:35 - 2:20	2:20-3:05PM	MENTOR
LSC I SEM MATHS	R.No 15 PHY(1-4)	RNo 15 MATHS(1-4)		R.No 15 CHEM(1-4)	R.No 15 MATHS(3-6) ENG (1-2)		HEM LAB 3, 4 5, 6		E X		Dr. A.S. Singh
.5c1 SEM		RNo 16 CHEM(14)	N A	R.No 16 ZOO(1-4)	R.No 16 BOT(1-4) ENG (5-6)		LAB 3, 4 5, 6	N A	R A		Dr Akık Agarwal
Sc I SEM UCRO I			τ		Seminar Hall MICRO(1-4)	Seminar Hall BOT(1-4)	Seminar Hall ZOO(1-4) ENG (5-6)	7		DIZOO LAB 3, 4 5, 6	Or Deepska Cpadhyay
Sc I SEM DMP I	RNo14 MATHS(1-4)	RNo 14 COMP(1-4)	0		CS LAB 3, 4 5, 6	R.No 14 PHY(3-6) ENG (1-2)	R.No 14 MATHS(3-6)	0 N		4	Dr. Vaishno Dass
Sc III SEM IATHS	R.No 7 SEC(1-2) CHEM(3-6)	R.No 7 PHY(3-6)	N		IEM LAB 3, 4 5, 6	R.No 7 MATHS(3-6)	R.No 7 MATHS(1-4)	A L	C U		Dr PK Sharma
S< 811 SEM IO III	R.No 8 BOT(3-6)	R.No 8 ZOO(3-6)	A		LAB 3, 4 5, 6	R.No 8 SEC(1-2) CHEM(3-6)			R R I C		Dr. Ajay Kumar
Sc III SEM	Exam Hall MICRO(1-4) SEC(5-6)	Exam Hall BOT(1-4)			7/ZOO LAB 3, 4 5, 6	R.No 15 ZOO(1-4)		S	L A R		Dr Manisha
Sc III SEM		CS LAB 3, 4 5, 6	A	R.No 10 MATHS(3-6)	R.No 10 PHY(1-4)	R.No 10 COMP(1-4) SEC(5-6)	R.No 10 MATHS(1-4)	0			Sh. Santosh Kum
.Sc V SEM MATHS		IEM LAB 3, 4 5, 6	N T	R.No 28 MATHS(1-4)	R.No 28 CHEM(1-4)	R.No 28 MATHS(1-4)	R.No 28 PHY(1-4) SEC(5-6)	N	A		Sh B P Gupta
Sc V SEM	1, 2	3, 4 5, 6	н	Exam Hall	Exam Hall ZOO(1-4)	R.No 16 CHEM(1-4)		G	C T I		Dr. Madhu Sharn
.Sc V SEM MICRO		7/ZOO LAB 3, 4 5, 6	E	BOT(1-4)	SEC(5-6)	Exam Hall MICRO(1-4)			I T I		Sh. Himanshu Si
Sc V SEM	R.No 33 MATHS(3-6)	R.No 33 COMP(1-4)	l w	R.No 33 PHY(1-4) SEC(5-6)	R.No 33 MATHS(1-4)		CS LAB 3, 4 5, 6		E S	•	Dr. Shikha Gupta

Dr. A.S.Singh (Incharge)

Dr. Alok Kumar (Principal)



1. Of Physics

KS- Dr. P.K.Sharma

BPG- Sh. B.P.Gupta

OK- Dr..Om kant

AS- Dr. Archana Sharma

MM- Mrs. Meenu Malik

AD- Mr . Amar Deep

DR - Ms. Deepti Rani

Deptt. Of Maths

SG- Dr. Shikha Gupta SU- Mrs. Surbhi Gup

AC- Ms. Arjoo Chauhan

Deptt. Of Micro

DU - Dr. Deepika Upadhayay

HS - Himanshu Singh

JU - Ms. Jaya Upreti

SJ - Dr. Sadaf Jahan

AT - Ms. Arti Thakur

Deptt. of Botany M- Manisha

Ms. I. hu Sharma

Deptt of Zoology

AK- Dr. Ajay Kumar

SV - Dr. Sandhya Vaid

AS - Sh. Anshul Sharma

Sh. - Ms. Shaily

SG- Dr. Shikha Gaur

SB- Ms. Shipra Bhatt

Deptt. of Computer Science

VD- Dr. Vaishno Dass

SK- Sh. Santosh Kumar

AC - Sh Ankur Chauhan

HP.- Sh. Hitesh Pujari

GN- Sh- Rishabh Narayan

Deptt. of Chemistry

AA- Dr. Alok Agarwal

AS- Dr. A.S. Singh X1- Dr. Richira Chaudhary

SG- Miss. Sarbani Gupta

AS - Mrs. Anshu Gupta

AM- Mr. Ankit Mishra

PT - Ms. Priyanka Tyagi



c 3 Sem.	Phy. 1- AJS 2- PKS 3. 4- AE 5. 6- DF		ASS C	Maths (3- 6) "XAM HALL] 5.4- AC 5.6-SG Comp (SEC) 1,2-RN [EXAM HALL]	Phy. (3-6) [EXAM HALL] 3,4 - DR 5, 6- PKS	R	Maths (3-6) (2XAM HALL) 3, 4- AC 5, 6- SU	Comp Sc. (3-6) [EXAM HALL] 3,4,5,6-AC		(3
Sc 3 <sup>rd</sup> Sem. MICRO Gr.)	1, 3-	(1 -4) 7] 2- S	Micro(1-4) [7] 1.2,3- HS 4-JU Micro (Sec) 5,6- JU	1, 2 - MS 1,	Micro. Practical 2 – S 1, 2- HS 3,4 – AK 3,4 SJ 5,6- S 5,6- JU	E	Bot. (1 -4) [8] 1,2 -MS 3, 4 -M		28	
B Sc. 5" Sem. (MATHS Gr.)	1,2 - 3, 4	hy. / Chem. -AD -OK BPG		Chem. ( 1-4) [16] 1,2-AM 3,4- PT Phy. SEC (5-6 [16] 5-BPG 6-OK	1,2- AC 3,4- SU	С	Phy. (1-4) [14] 1, 2- BPG 3, 4- AD	Math (1-4) [14] 1,2,3-SG 4- AC		
B Sc. 5th Sem. (BIO Gr.)	1,	2-M 1,2,3 ,4-MS 4	nem. Practical 3 –AS 1, 2- P - S 3, 4 -AN 5 –AK 5, 6- A	A Zoo( SEC)	Zoo. (1 -4) [10] 1,2- AS 3,4 -S	E	Chem. ( 1- 4) [7] 1,2 – AM 3, 4- PT			
B Sc. 5" Sen (COMP Sci.	n.	Maths (3 -6) [8] 3,4- SU 5,6- AC	Comp. (3- [8] 3,4,5,6-5	3 4- SG	2,5,6- AD Phy. (SEC)	S	Phy./Coi 1,3,4- DR 2,6-AD 5-PKS	mp. Practical 1,2,3,4,5,6 AC / HP	×	
B Sc. 5" S (MICRO G		1, 2- M 3,4- MS	/ Micro. Practi 1,2,3- AS 1,2 4 - S 3,4 5,6 - AK 5,6	- JU 3,4-M	Z- M	S	Micro ( 1-4) [10] 1 -SJ 2- JU 3 ,4 -HS			and the second real and th

National Song: 2:00 PM Room are written within () 4.2.3.4.5.6 denote Monday, Tuesday, Wednesday, Thursday, Friday & Saturday Respectively.



# CHINMAYA DEFREE COLLEGE BHEL, HARIDWAR TIME TABLE: 2018-19 (w.e.f.30.07) (18)

ASSEMBLY TIME: 10: 25 AM National Anthem: 10: 30 AM



Class/Pe	1	II I	III	IV		V	VI		
riod	8:55 - 9:40	9:40 -10:25	10:30 –11:15	11:15 – 12:00	12: to 12:.30	12:30 -01: 01:15	01: 15 ~02:00	VII 02:00-02:45	VIII 02:45 -03:30
3 Sc. 1 <sup>st</sup> Sem. MATHS Gr.)	Phy (1-4) [14] 1- PKS 2- AJS 3,4 - BPG	Maths(1-4) [14] 1, 2 -SG 3, 4 -AC	Chem.(1-4) [14] 1, 2- AA 3, 4- AS	Maths (3 -6) [14] 3,4- SG 5, 6- SU Eng.(1-2) [14]	R	Phy./ Chen 1 -PKS 2 -AJS 3, 4 BPG 5, 6- MM	n. Practical 1, 2- AA 3,4- AG 5, 6- RC		
3 Sc. 18 BIO Gr.)		Chem.(1-4) [15] 1,2 - AA 3,4 - AS	Zoo.(1-4) [15] 1,2 – AK 3,4 -AS	Bot. (1 - 4) [15] 1,2- M 3,4- X Eng. (5-6) [15]	E	1, 2- AS 1,2 3, 4- S 3, 4	t / Chem ctical 2 –X 1, 2- AS –MS 3, 4- PT 6- M 5, 6- AM		
B.Sc. 1st Sem. (COMP. Sci. Gr.)			Maths(1-4) [33] 1, 2 -SG 3, 4 -SU	Phy. (1-4) [33] 1, 2 -PKS 3, 4 -AD	С	Comp. (1 – 4) [33] 1,2,3,4 -VDS	Maths (3-6) [33] 3-AC 4,5,6- SG Eng. (1-2) [33]	Phy./ Com 1 -MM 2 -DR 3, AJS 4,5, 6- PKS	o. Practical 1, 2,3,4,5,6 VDS / SK
B.Sc. 1 <sup>SI</sup> (MICRO Gr.)				Micro(1-4) [28] 1,2 – AT 3 – JU 4 - DU	E	Bot. (1 - 4) [28] 1, 2 –M 3, 4 -X	Zoo. (1-4) [28] 1, 2- AK 3, 4- AS Eng. (5, 6) [28]		2 – AS 1, 2- H – S 3- SJ
B.Sc. 3 <sup>ro</sup> Sem. (MATHS Gr.)	Maths (3 -6) [16] 3, 4 – AC 5, 6 -SU	Phy. (3-6) [16] 3, 4 -BPG 5, 6 -PKS	Phy. // 1, 2 -BPG 3 -PKS 4- AJS 5 - AD 6 -MM	Chem. Practical 1, 2- AS 3,4- AA 5, 6- AM	s	Maths (3 -6) [16] 3, - SU 4, 5, 6 -SG	Chem.(3 -6) [16] 3,4 -AS 5,6- AA Chem (SEC) 1,2 - PT [16]		lerios to gular Stag
B.Sc. 3 <sup>rd</sup> Sem. (BIO. Gr.)		Bot. (3 -6) [33] 3,4 -M 5,6 - MS	1, 2- MS 3, 4- M	5./ Chem. Practical 1,2 – S 1, 2- RC 3, 4 – AK 3, 4- AM 5, 6- S 5, 6- AM	s	Chem.(3 -6) [15] 3,4-AA 5,6-AS Chem (SEC) 1,2 -SG	Zoo. (3- 6) [15] 3,4- AK 5,6 - S		



### CHINMAYA DEGREE COLLEGE BHEL,HARIDWAR (EVEN SEMESTER) TIME TABLE (w.e.f.21.04.2022)

Class/Period	1	II	III	IV	V	NATIONAL SO	VI
	9:00 - 9:45	9:45-10:30	10:40 -11:25	11:25 - 12:10	12:30 -0	1:15 01:1	5 -02 PM
B.Sc. 2nd MATHS	Chem(1-4) [33]	Math(1-4) (33)	Phy (1-4) [33]	Maths (1-4) [33] Env (5-6) [33]	Phy Ba	Lab. Practical 3 5 tch-1- Batch-II- Bat II - Batch-III- Ba	tch-III-
B.Sc. 2nd BIO		3	Chem.(1 -4) [15] Env [5-6] [15]	Bot (1-4) [15]	1 BOT Batch Zoo Batch Chem Batch	-1 Batch-II- II- Batch-III-	Batch-III- Batch-I- Batch II -
B.Sc. 4th MATHS	Maths (3 -6) [16] Math SEC(1-2) [16]	PHY(3-6) [16]	1 Phy Batch -1 B	atch-III- Ba tch III-	Maths (3- [16]		m.(3 -6) [16]
B.Sc. 4th BIO.	Bot (3-6) [28] Bot SEC (3-6) [28	[20]	BOT Batch-1 B Zoo Batch II- Ba	ractical 3 5 atch-II- Batch-III- atch –III Batch-I-, Batch II- Batch II-	Zoo (3-6 [28]		
B.Sc. 6 th MATHS		ractical 3 5 Sh-II-BPG Batch-III-PKS	Maths ( 1-4) [16] 1,2-SG 5,6-AG	Maths (1,2,5,6) [16] 1-AG 2,5,6-X	Phy (1-4) [33] 1,2,3-PK5 SEC(5,6) [33] 4,5,6-BP	1, 2, 4	n[1-4] [3] , 3- S - A
B.Sc. 6 th BIO.	Lab. Pr 1 3 BOT Batch-1-M Batc Zoo Batch II-PR Batc Chem Batch III-A B	5 ch-II-AD Batch –III-M h –III-AK Batch I- PR	Bot (1-4) [28] 1,2 – AD 3,4 -M	Zoo(1-4) [28] 1-4 – PR SEC (5-6) X [28] 5,6- AK	Chem( 1-4 [28] 1, 2, 3-5 4 - A		

PHYSICS PKS – Dr. P.K.Sharma BPG- Sh. B.P. Gupta

CHEMISTRY AS- Dr. A.S. Singh A- Ms. Anju Sharma S-MS.SHIVANI

ZOOLOGY AK- Dr. Ajay Kumar PR- Ms.Prerna Rajput MATHEMATICS AG-MS. ASTHA GOYAL

BOTANY M- Dr. Manisha AD- Ms. Ayushi Dhiman ENGLISH

AASI



			IINMAYA DEGREE COLLE d 5 <sup>th</sup> Semester <b>) TIM</b> E TA			Chemi	sty
NATIONAL AN	NTHEM : 10 : 30 A	M				NATION	IAL SONG : 2:05 PM
Class/Period	1	II II	III	IV		V	VI
	9:00 - 9:45	9:45-10:30	10:40 -11:25	11:25 - 12:10	1	12:30 -01:15	01: 15 -02 PM
B.Sc. 3rd MATHS	Maths (3 -6) [16] 3,4- 5,6-	PHY(3-6) [16] 3, 4- 5, 6-	1	ractical 3 5 tch -II- Batch -III- Batch II-		Maths (3 -6) [16] 3- 4-A 5,6-	Chem (3:6) [16] 3,4 - 5.6 SEC: (1-2) (16)
B.Sc. 3rd BIO.	Bot (3-6) [28] 3,4 – 5,6 -	Chem (3 -6) SEC-1-2 [28] 3,4 2,6 -	D 1 Lab. P 2 BOT Batch-1 Ba 2 Zoo Batch II- Ba	ractical 3 5 stch-II- Batch-III- atch -III- Batch II-, batch II- Batch III-	LUNCH	Zoo ( 3-6) [15] 3,4- 5,6-	
B.Sc. 5 th MATHS	Phy Batch-1- i	Practical 3 5 Batch-III- Batch-III- Batch Batch III-	Maths (1-4) [16] 1,2- 5,6-	Maths (1,2,5,6) [16] 1- 2,5,6-	BREAK	Phy (1-4) [33] 1,2,3- SEC(5,6) [33] 4,5,6 -	Chemia-4] (- [33] 7 (1, -2, 3) 7 (-4
B.Sc. 5 th BIO.	1 BOT Batch-1- B	Practical 3 5 Batch-II- Batch -III- Batch II- Batch II-	Bot (1-4) [28] 1,2 - 3,4 -	Zoo(1-4) [28] 1-4 - SEC (5-6) [28] 5.6-		(Chem(1-4) (28) -1,2,3-7	

Dr. A.S. Singh

Incharge Time Table

Dr. Alok Agrawal 1519

Principal



# **Teaching Plan**

# B.Sc. 1 Semester Core Course – Physics

### Mechanics

S. No.	Units	Topics	Lectures Required
1,	Vectors	1. Vector algebra – intro  - Scalar and vector triple products  - Properties of vector Triple Products  2. Reciprocal set of vectors – definition  3. Vector derivatives – intro  - Differentiation of a vector w.r.t. a scalar – expl.  - Differentiation of sum and products  - Partial differentiation of vectors  - Radial and transverse velocity  4. Vector integrals – intro  - Scalar and vector field	05
		- Line, Surface & Volume integral – explanation - Gradient, Divergence & curl of a vector field	
		Oradient, Divergence & curi of a vector field     Differential Equation – intro	06
2.	Ordinary Differential Equation	- Types of D.E. –ordinary and partial  - Order & degree of differential equation  2. Linear and non-linear differential equations  3. Solution of differential equation- methods expl.  4. Equation of the first order and first degree – expl.  5. Homogeneous & linear equations - explanation  - Solution of Linear differential equation	



S.No.	Units		Required
3.	Laws of Motion	1. Reference frame – intro	03
		- Inertial & non-inertial reference frame – expl.	
		2. Newton's laws in reference frame – intro	**
		- Newton's first, second & third law - expl.	06
4.	Momentum	1. Concept of work – intro	00
	and energy	- Work done in a stretched spring – derivation	
		- Work-energy theorem – proof	
		2. Conservative and non-conservative forces	
		- Definition & explanation	
		- Central force is conservative – proof	
		- Concept of Potential energy - explanation	-
	12 m	- Curl of a conservative force – derivation	
	e V	- Conservation of mechanical energy - proof	
		- Linear restoring force – proof	
		- Potential energy of simple pendulum – proof	
		3. Centre of mass – intro	
		- equation of centre of mass	
	*	- Motion of centre of mass	
		- Linear momentum with centre of mass	
		- Conservation of linear momentum	
		4. Angular momentum of system of particles – prod	of
		5. Rocket: System of Variable Mass – intro	
		- Motion of Rocket - theory	
		4. Angular momentum of system of particles – prod	of



S.No.	Units	Topics	Lectures Required
5.	Rotational Motion	1. Torque – intro	06
		- Translational & Rotational motion – explanation	
		- Angular velocity & Angular acceleration – def.	
		- Torque acting on a particle – definition	3
		- Angular momentum of a particle – definition	
		- Relation between torque & angular momentum	
	V3	2. Moment of Inertia – definition	
		- radius of gyration – definition	
	90 9	- K.E. of a rotating body – definition	
		- Angular momentum of a rotating body	
		3. Theorem of parallel axis – proof	
		4. Theorem of perpendicular axis – proof	
	1.10	5. Conservation of Angular momentum -proof	
6.	Gravitation	1. Central forces – definition	08
		- areal velocity remains constant – proof	
		2. Kepler's laws of planetary motion – theory/proo	f
		- The Law of elliptical orbits – explanation	
		- The Law of areas – explanation	
		- The Harmonic law – explanation	
		- Conclusion of Newton from Kepler's laws	
		3. Newton's law of Gravitation – definition	
		4. Period of motion of a planet about sun – expl.	



S.No.	Units	Topics	Lectures Required
		5. Satellite – intro	
		1 1	
19.5		- Launching of an artificial satellite – explanation	17 1
		- Revolution of a satellite around planet – proof	
		- Geo-stationary Satellite - explanation	
		- Weightlessness inside satellite - theory	
	1 5 1	- Escape velocity and orbital velocity - proof	
	Ng-	6 Global Positioning System - Basic idea	
7.	Fluids	1. Surface Tension – definition	09
		- Surface energy – explanation	
		2. Pressure difference b/w two side of curved surface	
i -		- theory & derivation	
		- Excess pressure inside air bubble – proof	
		3. Effect of temperature on surface tension – expl.	
		4. Determination of surface tension – explanation	
		- Jaeger's method - description	
	and the second	5. Viscosity – intro	
		- Stream-lined & turbulent flow - explanation	201
1		- Critical velocity and Reynolds number	
		- Velocity gradient - explanation	
		- Coefficient of viscosity - definition	
		- Poiseuille's formula – derivation	
		- Determination of viscosity of water - descript	ion
		6. Determination of coefficient of viscosity – intro	
		- Rotating cylinder method - description	



# B.Sc. 11 Semester Core Course – Physics Electricity and Magnetism

	11	Topics	Lectures Required
S. No.	Units		12
1.	Vector Analysis	Multiplication of Vectors - intro     Explanation of dot and cross product	12
		- Scalar and Vector Product of two vectors	3
		- Characteristics of each product	
		2. Polar and Axial Vectors	1
		- Definition and explanation	
		3. Gradient of a scalar field	
		- Definition and explanation	
	5 10 10	4. Divergence and curl of a vector field	
	n g <sup>e</sup> n	- Divergence - Definition and explanation	2.5
	100	5. Gauss's Theorem of divergence	
		- Gauss's Law, Poisson's and Laplace Eq.	
		- Curl – Definition and explanation	
		6. Stokes' Theorem – Definition and explanation	2
		7. Vector Integration	
		- Line Integral	
		- Surface Integral	
		- Volume Integral	



S.No.	Units	Topics	Lectures. Required
		- Effect of temperature on viscosity – explanation	
		7. Stokes' law of viscous force – theory	
		- Calculation of terminal velocity	
		- viscosity of highly viscous liquid	
		- velocity of rain drops	
8.	Elasticity	1. Elasticity – intro	10
	v	- Perfectly elastic - explanation	
		- Stress, strain, shear - definition	
	p =	2. Hook's law – definition	
		- Behaviour of wire under increasing load - theory	
		3. Young's modulus, Bulk modulus – definition	7 1
		4. Modulus of Rigidity, Poisson's ratio – definition	
		- Relation among elastic constants - proof	
		5. Difference b/w Angle of twist & angle of shear	
		- Twisting couple on a cylindrical rod - proof	
1		- Torsional rigidity – definition	
		6. Determination of Modulus of Rigidity	li.
		- Barton's Statical method - theory & method	
		- Torsional oscillation – explanation	****
		- Maxwell's Needle - theory & procedure	
		7. Bending Beam method – theory & method	
		- Longitudinal filament, Neutral surface- Def.	
		- Plane of Bending, Neutral Axis - Def.	



S.No.	Units	Topics	Lectures Required
	- Citto		22
2.	Electrostatics	1. Coulomb's Law - Definition and explanation	
		- Electric Field Strength	
		2. Gauss's Law and its applications	
	114	- Electric Flux	
	1 4	a de la configuration	
		- Definition and explanation	
		3. Electric Field of a uniformly charge sphere	
		- Derivation and explanation	
1		4. Electric Field due to an infinite line of charge	
		- Derivation and explanation	
		5. Electric field of an infinite plane sheet of charge	1
	,		
		- Derivation and explanation	
		6. Electric field due to charged conductor	
		- Derivation and explanation	
		7. Electric Potential – Definition and explanation	
		- Electric Potential as line integral of field	
		- Electric field as negative gradient of potential	
		8. Potential due to a dipole – derivation and exp.	
1		9. Potential due to a charged shell	
		- Internal and external point – derivation	
		10. Capacitance – Definition and Explanation	
	8" 2"	- Energy of a charged conductor	
11			



S.No.	Units	Topics	Lectures Required
		11. Capacitor – Definition and explanation	
- core		- Parallel Plate Capacitor -derivation	
		- Spherical capacitor	
		- Cylindrical capacitor	
		- Capacitor in series and parallel	
		12. Dielectric - Definition and explanation	
		- Electric Polarisation of matter	
		- Gauss's law of dielectrics - derivation	
		- Parallel plate capacitor with a dielectric slab	
	1 100	- Derivation	
		13. Electric Intensity - Definition & Expl.	
		Electric Polarisation – Definition & Expl.	
		Electric Displacement - Definition & Expl.	
		- Derive relation among these	
		14. Atomic polarizability – Definition & Expl.	
		Electric Susceptibility - Definition & Expl.	
		Dielectric constant - Definition & Expl.	
	400 000	Permittivity – Definition & Expl.	
		- Derive relation among these	
	1	15. Molecular Polarizability - explanation	
		- Molecular Field in a Dielectric	



S.No.	Units	Topics	Lectures Required
3.	Magnetism	1. Biot-Savart Law – Definition and Explanation	10
		- Magnetic field due to a long conductor - Deriv.	
		- Force between two parallel conductors - Expl.	70
		2. Magnetic field on the axis of circular loop – Deriv.	
		- Variation of the field – explanation	
1 1		3. Magnetic field induction due to solenoid – Deriv.	
		4. Ampere's circuital law – Definition and Deriv.	
		5. Divergence and curl of magnetic field	
		- Definition and explanation	
		6. Magnetic Dipoles - Explanation	
		7. Magnetic Scalar & Vector Potential	,
		- Derivation and explanation	
		8. Magnetic Properties of matter – explanation	
		- Magnetic Induction - Def. & expl.	
	4	- Intensity of magnetisation - Def. & expl.	
		- Magnetic Field Intensity - Def. & Expl.	
		9. Gauss' law in magnetism – Def. & expl.	
		10. Magnetic Susceptibility – Def. & Expl.	4
		- Magnetic Permeability - Def. & Expl.	
	15	11. Magnetic Substance – explanation	
		- Dia, Para & Ferro substance & Characteristics	5
		- Atomic model explanation of magnetism	
		- Curie temperature - explanation	



S.No.	Units	Topics	Lectures Required
4.	Electromagnetic Induction	Electromagnetic Induction – Explanation     Farady's law – first & second law -Definition	06
		- Induced emf from Lorentz force - motion of charge in changing magnetic field	
		- Time varying magnetic field  2. Farady's law in universal form – derivation  3. Vector potential in varying magnetic field- derivation	v.
		4. Self-induction – explanation  - Coefficient of self induction – def. & deriv.  - Determination of self – inductance  - Magnetic energy in a magnetic field – deriv.	
		Mutual Induction – explanation     Coefficient of mutual induction – def. & de     Measurement of mutual inductance	
		Inductance in series and parallel     Calculation of equivalent inductance	



### **B.Sc. III Semester**

## Core Course - Physics

# Thermal Physics and Statistical Mechanics

S.No.		mal Physics and Statistical Mechanics  Topics	Lectures
	Units		Required
1.	Thermodynamic	1. System and its surroundings – Introduction	14
	description of System	2. Zeroth law of thermodynamics and temperature	
		- Explanation with diff. between temp. & heat	
		3. Equivalence of heat work – explanation	
		- Thermodynamic system - intro	
	1	- external work & internal work - intro	-1
		4. Dependence of work done on the path	
		- cyclic process – explanation	
		5. Internal energy of a system – intro	
	-	- First law of thermodynamics – explanation	
		6. Some Thermodynamic processes - explanation	
	E.	- Cyclic, isobaric, isochoric, adiabatic	
	*	7. Ideal gas – explanation	
		- equation of state & specific heats of a gas -	
		deriv.	
	100	- external work done by an ideal gas in	
		Isothermal and adiabatic expansion	
		8. Isothermal and adiabatic process – Expl. & de	riv
		9. quasi-static process – explanation	
		10. Heat engine – thermal efficiency – explanati	
		11. Carnot's reversible heat engine – explanatio	n



S.No.	Units	Topics	Lectures Required
5.	Maxwell's equations and electromagnetic wave	Equation of continuity – explanation & deriv.      Maxwell's displacement current	10
	propagation	- derivation & explanation  3. Maxwell's equation of electromagnetism	
		- Derivation of Maxwell's first, second, third &	
200	y and	fourth eq.	
		4. Electromagnetic waves – introduction	
		- derivation of eq. for plane electromagnetic	
	las i	Waves - relation between magnitudes of E and B	
	101	5. Poynting vector – derivation & explanation	
	9.	- Momentum of an electromagnetic wave	
		6. Reflection and refraction of EM wave	
10.00	neda (**)	- derivation & explanation	
		7. Polarisation by reflection – derivation	
		- derivation of reflection coefficient	
		8. Total internal reflection – derv. & explanation	



S.No.	Units	Topics	Lectures
J.110.	Onito	Topics	Required
3.	Kinetic Theory of	1. Kinetic theory of matter – explanation	12
	Gases 2. kinetic theory of gases – explanation		
	4,	- Pressure exerted by a gas – expl. & derivation	
		- rms speed – derivation & application	
		3. Kinetic interpretation of temperature – explanation	
		4. Law of equipartition of energy - explanation	
		- degrees of freedom	
		- calculation of ratio of specific heats for mono,	
		Dia and triatomic gases	
	ž.	5. Maxwell's law of distribution of speeds – deriv.	
		- calculation of average speed	
		- calculation of rms speed	
		- calculation of most probable speed	
		- momentum wise distribution of speeds	
		- energy wise distribution of speeds	
		6. Mean free path – explanation and derivation	
		7. Transport Phenomena – theory	
		- viscosity of a gas – theory and derivation	
		<ul> <li>Thermal conductivity of a gas – theory &amp; deriv.</li> <li>Diffusion of gases – theory and derivation</li> </ul>	1
==-		- Diffusion of gases – theory and convention	
	1 1 2 1		



S.No.	Units	Topics	Lecture Require
	5 (A) (A)	12. Carnot's ideal refrigerator	
		- Coefficient of performance	
		13. Second law of thermodynamics – explanation	
	2 *, < 1 × y	14. Carnot's theorem – explanation	
		15. Absolute scale of temperature	
		16. Entropy – physical significance - intro	
		- change in reversible & irreversible cycle	
		- entropy & second law - explanation	
		- carnot cycle on T-S diagram	
	8	- Entropy change in various phenomenon	
		17. Third law of thermodynamics	
		- Nernst heat theorem	
		- Entropy and disorder	
2.	Thermodynamic	Maxwell's four thermodynamic relations	10
	Potentials	- explanation & derivation	
		2. Clausius clapeyron equation – derivation	
		3. expression for Cp-Cv - derivation	
		4. First and second T dS equation – derivation	
	The res	5. Joule-Thomson effect – explanation & deriv.	
	901, 3 4	6. Thermodynamic Potentials – explanation	
		- Internal energy, Helmholtz function, Enthalpy	
		Gibbs function	



S.No. Units	Topics	Lectures Required
5. Statistical Mechanics	1. Probability of a distribution – derivation  - calculation of most probable distribution  2. Maxwell- Boltzmann Distribution law – derivation  3. Ensemble – theory  4. Phase space – theory  - microstate and macrostate of a system  5. Classical and quantum statistics  6. Maxwell-Boltzmann classical statistics  - theory & derivation  7. Bose-Einstein quantum statistics  - theory & derivation  8. Fermi-Dirac quantum statistics  - theory & derivation  9. Comparison of three statistics	12



S.No.	Units	Topics	Required 12
4.	Theory of	1. Radiation – intro	12
	Radiation	- Prevost's theory of exchanges – theory	
		- Characteristics of thermal radiation	
		- Pressure of radiation – derivation	
		- concept of energy density	
-		2. Black Body – intro	
		- Emissive & absorptive power – definition	.4
		- Kirchhoff's law - explanation	
		3. Stefan's law – definition and derivation	
		- Experimental verification	
		- Stefan-Boltzmann law - theory and	
		experimental determination	
		4. Spectral distribution of energy in black-body	
		Radiation – explanation	
		- Wein's displacement law - derivation	
		- Wien's distribution law – derivation	
		- Rayleigh-Jeans law – derivation	
		5. Planck's radiation formula –derivation	
	8 M - 1 5 A - 2	- Derivation of Rayleigh- Jeans & Wien's law	
		From Planck's law	
		- Derivation of Wien's Displacement law &	
		Stefan's law from Planck's law	
Call			



S.No.	Units	Topics	Lectures Required
		8. Beats – theory with graph	
		- calculation of number of beats per second	
		9. Formation of Stationary waves _theory	
		- characteristics of stationary waves	
		10. Phase and group velocity – definition & deriv.	
		- relation between group & wave velocity	
3.	Oscillations	1. Simple harmonic motion – intro	06
		- various terms explained	
		- Differential equation of motion	
		- Energy of S.H.M Potential & kinetic	
		- Time average & position average of energy	
		2. Free and damped oscillation – intro	= ==
		- equation of damped harmonic oscillator	
	r"	- Power dissipation in damped harmonic oscillator	
	=	- Quality factor and relaxation time	
4.	Sound	1. Free and forced oscillations – intro	06
		- resonance – explanation	
		- equation of forced oscillation	
		- sharpness of resonance	
		2. Fourier's theorem – intro	
		- evaluation of constants	
	n* >	- Analysis of saw tooth wave	
		- Analysis of square wave	



## B.Sc. IV Semester Core Course – Physics Waves and Optics

### A. Waves

S.No.	Units	Topics	Lectures Required
1.	Superposition of Harmonic Waves	Principle of superposition – theory     Linear superposition	06
		- Addition of two S.H.M.	
		2. Lissajous figures – theory	
		- Perpendicular superposition	
		- resultant with frequency in ratio 1:1 & 1:2	
	20	- graphical and analytical methods	11 -
		- Methods of obtaining Lissajous figures	
		- Application of Lissajous figures	2 2 27
			=
2.	Wave Motion	1. Wave – intro	07
		2. Propagation of transverse & longitudinal waves	
		- explanation with displacement curve	
		3. Differential equation of wave motion –derivation	
		4. Equation of plane progressive wave - derivation	
		- relation between particle and wave velocity	
-		5. Pressure equation of plane wave - derivation	n 5
		6. Energy distribution in plane progressive wave	
		7. Interference of waves – theory & derivation	1
		- Constructive & destructive	



S.No.	Units	Topics	Lectures Required
	. 1	3. Fresenl's Biprism – theory & derivation	
		- calculation of fringe width & experimental set-up	
		- thickness of a plate	Х.
		4. Phase change on reflection (stokes' treatment)	
1 - 3 88506		5. Lloyd's mirror – theory & derivation	
		- difference between biprism and Lloyd	
		6. Interference in thin films (division of amplitude)	
		- condition of maxima & minima	
		- Wedge-shaped film - theory & derivation	
		7. Formation of Newton's rings-	
		- theory & derivation	ja .
		- diameter of bright and dark rings	
5 7		- experimental arrangement	
		- determination of refractive index of a liquid	
		- general expression for rings	
		8. Fringes of equal thickness and equal inclination	
		9. Michelson Interferometer – theory	
		- Construction & working	I Van
		- Adjustment of the M.I.	
		- Determination of wavelength	
		- Determination of difference in wavelength	



S.No.	Units	Topics	Lectures Required
		3. Acoustics of Building – intro	
		- Acoustic characteristics of hall & auditorium	
- m		- Reverberation - Sabine formula and absorption coefficient	
		- Sabine formula for a live room	
		- Reverberation time in dead room	

### B. Optics

Units	Topics	Lectures Required
Vave theory	1. Nature of light – intro	03
of light	2. Huygens' principle – theory	
	- Reflection of a plane wave	
	- Refraction of a plane wave	
	- Total Internal Reflection	
	- Refraction through a lens	
Interference	1. Interference of light – intro	13
	2. Young's experiment (division of wavefront)	
	- Resultant intensity of two interfering waves	
	- fringe width	
	- conditions for interference of light	
	- coherent sources	
	Vave theory of light	1. Nature of light – intro  2. Huygens' principle – theory  - Reflection of a plane wave  - Refraction of a plane wave  - Total Internal Reflection  - Refraction through a lens  Interference  1. Interference of light – intro  2. Young's experiment (division of wavefront)  - Resultant intensity of two interfering waves  - fringe width  - conditions for interference of light



S.No.	Units	Topics	Lectures Required
13.	1200	3. Doubly-Refracting Crystals – theory	
		- optic axis of the crystal	
		- principal section of the crystal	
		- double refraction	
		4. Nicol's prism – Construction & action	
		5. Law of Malus – theory	
		6. Plane, circular and elliptical polarised light	
		- theory & representation	
D 48		7. Quarter-wave plate – construction & working	
		8. Half-wave plate – construction & working	
		9. Production of Plane polarised light	v
		- Production of circular polarised light	
9		- Production of elliptical polarised light	
		- Distinction among these	
		10. Analysis of polarised light - explanation	



S.No.	Units	Topics	Lectures Required
7.	Diffraction of	1. Fresnel's Half-Period zones – theory	14
	Light	- construction of half-period zones	
	1	- amplitude due to a zone	
		- resultant amplitude due to all zones	
		2. Zone plate and its construction	
		- theory of zone plate	****
		- multiple focus of zone plate	
		3. Diffraction of light – theory	
		- Fresnel and Fraunhofer diffraction	
		- Division of cylindrical wavefront	
		- Diffraction at a straight edge – theory & deriv.	
		- Diffraction at a narrow wire	
		- Diffraction at a rectangular aperture	
		4. Fraunhofer's diffraction at a single slit	
		- theory & derivation	
		Diffraction at a double slit	
		5. Plane Transmission Diffraction grating	
		- theory & construction	
		- formation of multiple spectra by grating	
		- elementary theory	
		- determination of wavelength of light	
	8. Polarizat	ion 1. Polarisation of light – intro	05
		2. Brewster's law	



S.No.	Units	Topics	Lectures Required
3.	Wave-Particle	1. De-Broglie Hypothesis of matter waves – intro	06
	Duality		
	(Matter Waves)	- De-Broglie wavelength of matter waves	1
	,	- De-Broglie wavelength of Electron	
		- Demonstration of matter waves - intro	
1.29			
	F 1	2. Davission and Germer Experiment – explanation	
		3. G.P. Thomson's Experiment- theory & proof	
		4. De-broglie wavelength of Helium atoms	
			16
		5. Bohr Quantisation Condition –theory	
		- Circumference of electron orbits	
		6. Dual nature of light and matter- explanation	
	Atomic Model	1. Atomic Structure – intro	08
4.	Atomic Wiodei		0 1 s
	August 1 See	- Thomson's model of Atom - Explanation	
		- Rutherford's Nuclear Model of Atom - Expl.	14/
		- Difficulties in Rutherford's model - discussion	
		- Bohr's Quantum model	
		- Wave Mechanical model	
		2. Bohr theory of Hydrogen Spectrum – intro	
		- Bohr's two postulates - explanation	
		- Emission of Spectrum – emission	
	25- 25-	- Different series & their explanation	
	1 7	- Shortcomings of Bohr's theory – discussion	
		- Bohr theory corrected for nuclear mass	
	1.4	3. Sommerfeld's Extension of Bohr Theory	



# B.Sc. V Semester DSE Course – Physics Elements of Modern Physics

S.No.	Units	Topics	Lectures Required
1.	Origin of Quantum Theory	1. Planck's Quantum hypothesis – intro  - Average energy of Planck's Oscillator – proof  - Planck's Radiation Formula – derivation  - Energy Distribution by Planck's formula – expl.  - Properties of Photon – explanation  - Classical Mechanics & Origin of Quantum Th.	06
2.	Photoelectric Effect and Compton Effect	1. Photoelectric Effect – intro  - Experimental observation – discussion  - Dependency upon Intensity of Light – discussion  - Dependency upon Frequency of Light – disc.  - Laws of Photoelectric emission- explanation  2. Compton Effect – intro  - Theory & Derivation	06
		- Calculation of Compton Wavelength  - Experimental Verification  - Measurement of Recoiled electron energy  3. Comparison of Compton & Photoelectric effect  4. Franck-Hertz Experiment – explanation  - Interpretation of the curve  - Demonstration of discrete energy levels	



S.No.	Units	Topics	Lecture: Require
		4. Excitation & Ionisation Potential of an atom- intro	
		- Franck-Hertz Experiment - discussion	
		- Interpretation of the curve	
ja .		5. Bohr's Correspondence Principle - theory	
5.	Uncertainty Principle	1. Heisenberg's Uncertainty Principle	04
	rimeipie	- Determination of position of particle - deriv.	
		- Diffraction of electron-beam -theory	
		- Concept of Bohr Orbit - discussion	
		- Uncertainty in Velocity – deriv.	
		- Electrons in Nuclei- discussion	
		- Complementarity Principle - discussion	
6.	Quantum	1. Short comings of old quantum theory – intro	15
	Mechanics	2. Operators – intro	
		- Eigenfunctions & Eigenvalues – definition	
		- Properties of functions and operators	
		- Definition of an operator	
		- Linear, Identity, Null operator - definition	
		- Power of an operator – definition	
		- Inverse, singular & non-singular operators – def.	
		3. Postulates of wave mechanics – intro	1
		- Discussion of I, II, III & IV postulates	
		4. Schrodinger's Time-dependent wave equation	
		- theory & derivation	3.0



S.No.	Units	Topics	Lectures Required
		5. Schrodinger's time-independent equation	
		- theory & derivation	
		6. Orthogonality & Normalization o wave function	
		- definition	
		7. Probability Density – derivation	
		8. Expectation values of dynamical variables	34
-		- definition and properties	
		9. Different operators in Q.M.	Dr. 1
		- Momentum, Velocity, Kinetic & Total Energy	6
		- Angular momentum – definitions	
		10. Principle of Superpositions – definition	
-		11. Potential Problems	
		- Potential step – derivation	
		- Expressions for the wave functions	
10 =0		- Probability current densities - calculation	
		- Reflection and Transmission Coefficients	
		12. Square-well with finite sides – theory & deriv.	
		13. Particle in a rigid 1-dimensional box – deriv.	
11 1		14. Eigen functions and Eigen values of a particle	1 5
		In a box – theory & derivation	
		15. Particle in a 3-D Rigid box – theory & deriv.	
		16. Quantum Tunnelling – intro	. [4
		- Rectangular potential barrier - theory & deriv.	



S.No.	Units	Topics	Lectures Required
		17. Particle in a finite square potential well ( Non	
		rigid) - theory & derivation	
		18. The harmonic oscillator – theory & derivation	
		19. Angular Momentum – intro	76.0
		- Calculation of diff. components of A.M.	
7.	Nuclear	1. General Properties of Nucleus – intro	15
	Physics	- Nuclear size & shapes – discussion	
		2. Structure of the Nucleus – intro	
		- Consideration of nuclear size, spin, magnetic	
		Moment, isotopes, Proton-neutron hypothesis,	
=		Nuclear Stability	
		- Basic Properties of an atomic nucleus – angular	
		Momentum, Parity, symmetry, magnetic dipole	7
		Moment, electric quadrupole moment – disc.	
-		3. Packing fraction of an isotope – intro	
	90 - V 1	- Unified atomic mass unit – def.	
		- Mass defect & binding energy - def.	
		- Binding energy curve - explanation	- 4
		- Angular momentum of nucleus - definition	
		- Nuclear magnetic moment- theory & deriv.	
		4. Saturation phenomenon & exchange forces – intro	
		- discussion & properties of nuclear forces	



S.No.	Units	Topics	Lectures
		5. Nuclear Models – intro	
		- Liquid drop model of nucleus - discussion	100
		- Nuclear binding energies – calculation	
		- Short comings of Liquid-drop model – disc.	
		6. Semi-empirical mass formula – intro	
		- Calculation of different energies	
		- Application of semi-empirical mass formula	
		7. Natural Radioactivity – intro	
2		- Properties of alpha, beta & gamma particles	
		- Laws of radioactive disintegration- disc.	8
		- Calculation of Half-life & Decay constant	
		- Calculation of Mean life of a radioactive element	
		- Soddy's displacement law - discussion	
		- Law of successive disintegration and	
		Radioactive equilibrium – theory & proof	
		Radioactive dating - calculation of age of earth	160
		8. Alpha decay – theory & explanation	
100		9. Beta decay – theory & explanation	
-		- Characteristics & experimental investigation	
		10. Gamma decay – theory & explanation	
		11. Nuclear Reactions – theory	
		- Conservation laws - explanation	
		- Cross-sections of nuclear reactions – theory	



### B.Sc. V Semester SEC Course - Physics

S. No.	Units	Topics	Lectures Required
1.	Network Analysis and Network Theorem	1. Kirchhoff's Laws – intro  - Series & parallel corrections  2. Network Theorems – intro  - Thevenin, Norton, maximum power transfer,	10
		Superposition & reciprocity theorem – proof  3. Low & High pass filters – intro  - theory & diff. circuits  4. Four terminal network – theory & circuits  5. Electronic Measuring Instruments – intro  - VTVM – theory, construction & working	
		- CRO - theory, construction & working	10
2.	Solid State Devices	1. Electronic Devices – intro  - General idea of diode  - Triode – principle, construction & characteristics  - Tetrode – principle, const. & characteristics  - Pentode – principle, const. & characteristics  2. Semiconductors – intro	
		- Intrinsic & extrinsic semiconductors – theory  - p-type & n-type semiconductors – theory  - pn junction diode – theory, cons. & working  - point contact diode- theory, cons. & working	



S.No. Units	Topics	Lectures Required
;	- Determination of cross section	
		1.0
	- Nuclear reactions by alpha-particles, protons	
	Deuterons, neutrons, photons – explanation	***
1-04	- Q-values of nuclear reactions	
	12. Nuclear Fission – intro	
	- Bohr-wheeler theory - explanation	
	- Fission fragments - expl.	
	- Neutron emission & energy released - expl.	
- "	- Self-sustained chain reaction	
	- Controlled chain reaction	
	- Atom bomb – intro	
the second	13. Nuclear reactors – Construction & working	
	14. Nuclear fusion – theory	
,	- Hydrogen bomb – intro	
	- Practical difficulty in controlling fusion	



S. No.	Units		
		Topics	Lectures
	1	- Class A – circuit & working	Required
		- Class B – circuit & working	
		- Class C – circuit & working	
		- Decibel, frequency response & bandwidth	
2.	Feedback Amplifiers	1. Feedback Amplifiers – intro	15
	and Oscillators	- Classification of amplifiers	
		- Negative feedback & its advantage	
	A	- Voltage & current feedback	
	4	2. Oscillators – intro	
		- Positive feedback - discussion	
		- RC phase shift – circuit & working	
		- Wein bridge - circuit & working	
		- Hartley – circuit & working	
	1911 - 1911	- Colpitts - circuit & working	
		- Tuned Base - circuit & working	
		- Tuned Collector - circuit & working	
	1	- Tuned drain – circuit & working	
		3. Crystal oscillators – intro	- 1-
		- Piezoelectric effect - discussion	
		- Crystal controlled oscillator – circuit & working	
		- Study of stability	
	3.00	4. Relaxation Oscillators – intro	
		- Types of Multivibrators	



## B.Sc. VI Semester SEC Course – Physics Electronics – II

		T .	Lectures
S. No.	Units	Topics	Required
1.	Transistor	1. Transistor Amplifier – intro	15
	Amplifiers	- Classification of amplifier	
		- Basic amplifier – working	
		- Study of load line graph	
		- Study of different transistor biasing	
		- Transistor equivalent circuit – working	
		- h-parameter calculation	
		2. Single stage transistor amplifier – intro	
		- CE configuration – circuit & working	
		- CB configuration - circuit & working	
		3. FET amplifier – intro	
		- Circuit & working	
		4. RC coupled transistor amplifier – intro	
		- Circuit & working	
		5. LC coupled transistor amplifier – intro	
		- Circuit & working	
		6. TC coupled transistor amplifier – intro	
		- Circuit & working	
		7. Noise & distortion in amplifiers – discussion	
		8. Power Amplifiers – intro	
		- Types of power amplifiers	



S.No.	Units		
		Topics	Lectures Required
		9. Vector Atom Model – intro	Required
		- Spatial Quantisation - disc.	
		- Spinning Electron – disc.	
	1-	10. Coupling Schemes – intro	
		- L-S coupling scheme - Guiding Principle	
14		- J-J coupling scheme - discussion	



S.No.	Units	Topics	Lectures
831 A		- Experimental Set A l'	Required
		- Experimental Set-up, Adjustment & Procedure	
		- Explanation of Normal Zeeman Effect - deriv.	
		- Explanation of Anomalous Effect- deriv.	
		- Zeeman effect in some transitions- disc.	
6.	Many Electron	1. Pauli's Exclusion Principle – intro	10
	Atoms	- Shell structure of the atom	
		- Electron distribution in shells	
		- Maximum number of electrons in a shell	
		- Periodic table of elements	
		2. Physical meaning of identity	
		3. Symmetrical and antisymmetric wave functions	
		- definition	
		- Exchange degeneracy	
		4. Spectral terms and their notations	
		5. Alkali Atoms Spectra – intro	
		- Principal, sharp, diffuse & fundamental series	
		- selection rules - transition rules	
		6. Coupling of orbital & spin angular momenta	
		- Multiplicity of energy states	
		7. Spin-orbit Interaction energy- derivation	
		8. Total Angular Momentum of Electron	
		- Commutation relations of T.A.M. with comp.	
		- Eigen values of J <sup>2</sup> , J <sub>z</sub> , J <sub>+</sub> and J calculation	



S.No.	Units	Topics	Lectures Required
		- Solution of r-equation	
		- The total wave function	6- 4-
		- Energy of atomic levels & degeneracy – disc.	
	T.	5. Angular momentum operator & their	
		commutations rules - intro	
		- commutation rules & operators	
		- Eigen values of L <sup>2</sup> and L <sub>z</sub> - calculation	
-		- Eigen functions of L <sup>2</sup> and L <sub>z</sub> - calculation	
5.	Atoms in	1. The orbital and the spin magnetic moment – intro	12
	Electric and Magnetic	- def. of orbital magnetic moment	
	fields	- def. of Bohr magneton, Gyromagnetic ratio &	
		Lande's splitting factor	
		- The spin magnetic moment - definition	
		2. Larmor Precession – def. & discussion	
		- Space Quantisation	
		3. Vector Atom model – discussion	
-	=	- Principle of V.A.M.	
		- Experimental Arrangement (Stern & Gerlach)	
		- Results & discussion	
		- Limitations of Stern-Gerlach	
	T was	- Description of quantum numbers in V.A.M.	
		4. Zeeman effect – intro	
		- Normal & Anomalous Zeeman effects	



S.No.	Units	Topics	Lectures
		- Parabolic potential well	Required
		- Calculation by classical & quantum method	
		- Calculation of Eigen value & probability	
	- A	Distribution	
		3. 1-D motion in step potential – intro	
		- The single step barrier – calculation	
e <sup>2</sup>		4. The square well potential – intro & calculation	
		- The case of discrete energy levels & scattering	
		- Calculation of maximum & minimum values of	
		the transmittance	
		- Infinitely deep square well	
	, <sup>1</sup>	5. Rectangular potential barrier – calculation	
		- Tunnel effect – discussion	
		- Application of Tunnel effect	
4.	Quantum theory of	1. Time independent Schrodinger equation in	10
	hydrogen-like atoms	spherical polar co-ordinates- intro	
	atoms	- Separation of variables	
	Peg	- Solution of the equations (quantum numbers)	
		- Interpretation of quantum numbers	
		2. 3-D Harmonic Oscillator- intro & derivation	
		3. Rigid Rotator – derivation	
		4. The hydrogen atom – intro	
		- Solution of phi equation	11



S.No	. Units	. Topics	Lectures Required
		- Commutation relation b/w position & momentum	
		7. Expectation values of the dynamical variables	
		- definition of different quantities	
		8. The Uncertainty principle- Statement & expl.	
		- Examples of uncertainty principle	
		- Application of uncertainty principle	
		9. Complementarity Principle - intro	
2.	Time	1. Schrodinger's time independent wave equation	10
	Independent Schrodinger Equation		
	Equation	- Stationary state (time independent) solution	
35.	D 06.099	2. Wave packet – introduction & derivation	
		- representation by Fourier methods	
		- Fourier series and Fourier integral	
		3. Fourier Integral theorem from Parseval's formula	
		4. Application of Fourier transforms to a Gaussian	
		Function – calculation	
-		5. Superposition of plane waves moving in space	
		with angular frequency	
	General	1. A particle in a rigid 1-D box (infinite potential	12
b	discussion of bound state in	well) – introduction & derivation	
	an arbitrary potential	- calculation of Eigen values of energy, wave	
		function, probability density	
		2. 1-D linear harmonic oscillator – intro	



## B.Sc. VI Semester DSE Course – Physics Quantum Mechanics

S.No.	Units	Topics	Lecture Require
1.	Time Dependent	1. Schrodinger's time independent wave equation	06
	Schrodinger Equation	- introduction	
	Equation	- equation of motion for a free particle	
		- Time dependent Schrodinger equation – proof	
		2. Properties of wave function – discussion	
1		- Physical interpretation of wave function – expl.	
		- Condition for physical acceptability- disc.	
		- Probability current density/particle flux – deriv.	
		- Normalization of wave functions – disc.	
		3. Solution of time dependent Schrodinger equation	
		- calculation	
		4. Orthonormal Properties of wave function- calcu.	W 12
		5. Eigen values and eigen functions – explanation	
	88 - 5	- superposition of eigen states - proof	
		6. Operators – intro	
		- definition of energy, momentum, K.E., velocity	
		Potential energy	1
		- Theorem of commutativity and simultaneity	
1	danker a	- Converse of theorem – proof	
		- Commutator algebra – explanation	
		- Parity, pi & projection operator - definition	



S.No.	Units	Topics	Lectures Required
	r Kar	- Regulated power supply – working  - Voltage Regulation by Zener diode – working	
		- Voltage multiplier – theory & working  4. Number Systems – intro	
		- Binary number system – theory & laws - Decimal number system – theory & laws	
		- Hexadecimal number system - theory & laws	
		- Octal number system – theory & laws - Interconversion among diff. number system	
		Boolean Algebra – intro     Study of different laws	
		6. Logic Gates – intro  OR,AND & NOT Gate – sym., circ. & truth table	
		- NAND, NOR, XOR- sym., circ. & truth table	



S.No.	Units	Topics	Lectures Required
77		- Zener diode - theory, cons. & working	
	1		
		- Varactor - theory, cons. & working	
		- Tunnel Diode - theory, cons. & working	
		- Photodiode - theory, cons. & working	
		- LED - theory, cons. & working	
		3. Transistors – intro	m
		- Operation & characteristic curves	
12+0		- CE configuration - Characteristic	
		- CB configuration - Characteristic	
		- CC configuration - Characteristic	
		- Current amplification	
		4. Field Effect Transistor – intro	
		- Theory & Working	10
	Rectifiers and	1. Rectifiers - intro	
3.	Filters	- HW rectifier - circuit & working	
		- FW rectifier - circuit & working	
		- Bridge rectifier - circuit & working	
		2. Filter Circuits – intro	
		- Series L - theory & working	
		- Shunt C - theory & working	
		- PI filter - theory & working	
- 4.5		3. Power Supplies – intro	
		- Unregulated power supply - working	



S. No.	Units	Topics	Lectures Required
	BALL TO	- Astable multivibrator - circuit & working	
		- Monostable multivibrator – circuit & working	
- 17		- Bistable multivibrator - circuit & working	



## B.Sc. Semester- II Plant Ecology and Taxonomy

.No.	Units	Topics	Lectures required
1.	Introduction	Introduction about the subject	2
,	Ecological Factors	<ol> <li>Soil</li> <li>✓ General account</li> <li>✓ Composition of soil</li> <li>✓ Types of water in soil</li> <li>✓ Soil moisture</li> <li>✓ Water holding capacities of different soils</li> <li>✓ Adaptations in relation to soil</li> <li>✓ Soil formation</li> </ol>	3
		<ul><li>2. Light factor</li><li>✓ General account</li><li>✓ Photoperiodism</li></ul>	1
		3. Environmental temperature factor  ✓ Regulation of physiological process  ✓ Effect on vegetation pattern and composition	1
	1562 y 198	<ul> <li>4. Concept of limiting factors</li> <li>✓ Leibig Blackman's law of minimum</li> <li>✓ Shelford's law of tolerance</li> </ul>	2
		<ul> <li>Adaptations of hydrophytes and xerophytes</li> <li>✓ Morphological and anatomical features of hydrophytes and xerophytes</li> </ul>	2
	Plant communities	<ol> <li>Plant communities</li> <li>✓ Characteristics</li> <li>✓ Ecotone and edge effect</li> </ol>	2
		<ul> <li>2. Succession</li> <li>✓ Process &amp; Types</li> <li>✓ Theories of succession</li> <li>✓ Hydrosere</li> </ul>	3



5.	Pteridophytes	1. Pteridophytes	2
4.	, , , , , , , , , , , , , , , , , , , ,	✓ Introduction	
		✓ General characteristics	
		✓ Classification	
		Classification	
		2. Early land plants	2
		✓ Cooksonia	
	,	✓ Rhynia	
	X I	3. Classification (upto family),	2
		morphology, anatomy and	
		reproduction	
		✓ Selaginella	The same of the sa
		✓ Equisetum	· Special of the
LIN OR ADVENTURE	MEN A About twice in the Area of Art.	✓ Pteris	
			1
		4. Heterospory and seed habit	1
	9.		1
		5. Ecological and economic	-
		importance of pteridophytes	
	1		2
i	Gymnosperms	1. Gymnosperms	-
		<ul><li>✓ Introduction</li><li>✓ General characteristics</li></ul>	
	10.00	✓ Classification	
	W 4 **	2. Classification (upto family),	3
	E	morphology, anatomy, and	
		reproduction	
		✓ Cycas	
		✓ Pinus	
			± , = 1 , 1
		<ol><li>Ecological and economical</li></ol>	1
	¥	importance	
			Total-14



		√ Penraduction		
		✓ Reproduction	1007	
	* * * * * * * * * * * * * * * * * * *	2. Classification of Fungi	2	
		3. True Fungi	1	
		✓ General characteristics		
i		▼ Ecology & significance		
		4. Life cycles	3	
	.7	✓ Rhizopus	e e d	
		✓ Penicilium		
		✓ Alternaria		
	= 4	✓ Puccinia		
	II .	✓ Agaricus		
		5. Symbiotic associations	2	*
		✓ Lichens	1.1	
		✓ Types of lichens		
		✓ Genral account		
		✓ Reproduction		
	- 2	✓ Significance of symbiotic		
		associations		
		6. Mycorrhiza	1	
		✓ General introduction		
~		✓ Ectomycorrhiza		
ľ		✓ Endomycorrhiza	1	
	<u> </u>	✓ Significance	Total-12	
_		1 Avehaganistas	2	
4.	Introduction to	<ol> <li>Archegoniates</li> <li>✓ Unifying features of</li> </ol>	-	
	Archegoniate	archegoniates		
		✓ Transition to land habit	14	į.
		✓ Alternation of generation	4	
1		, a		
	Bryophytes	1. Bryophytes	4	
		<ul> <li>✓ General characteristics</li> <li>✓ Adaptation to land habit</li> </ul>		
40		✓ Classification		1
177		✓ Range of thallus organization	*	
1.0		Name of thands organization		
		2. Classification (upto family),	4	1
		morphology, Anatomy &		
		Reproduction	5 60 8	
		✓ Marchantia	. A	
	***************************************	✓ Funaria	- frame x 1 cm	
		3. Ecology and economic	2	
	<u> </u>	importance of bryophytes	Takel 42	-
			Total-12	

.



### B.Sc. Semester- I Biodiversity (Microbes, Algae, Fungi and Archegoinate)

S.No.	Units	Topics	Lectures required
1.	Microbes	1. Viruses	5
		✓ Introduction	
		✓ Discovery	
1		✓ General structure	7
	-	✓ Replication (general account)	
	2	✓ DNA virus (T-phage)	
		✓ Lytic & Lysogenic cycle	
		✓ RNA virus (TMV)	P .
		✓ Economic importance	
			-
		2. Bacteria	5
		✓ Introduction	
		✓ Discovery	X .
		✓ General characteristics	1991
		✓ Cell structure	A 2 -
		✓ Bacterial Reproduction-	A
		Vegetative, Asexual and	N 20
		Recombination (Conjugation,	
		Transformation &	
		Transduction)	
		✓ Economic importance	
			Total-10
2.	Algae	1. Algae	4
1 745		✓ General Characteristics	
		✓ Ecology and distribution	
		✓ Range of thallus organization	
		✓ Reproduction in algae	
		2. Classification of Algae	2
		2 March day and life and a set	_
		3. Morphology and life cycles of	5
	,	the following algae	
		✓ Nostoc, Chlamydomonas,	
		Oedogonium, Vaucheria,	
		Fucus, Polysiphonia	
		4. Economic importance of	1
F4 , F4		bacteria	1
		Dacteria	
		200	Total-12
3.	Fungi	1. Introduction	3
		✓ General characteristics	
		✓ Ecology & Significance	
		✓ Range of Thallus Organization	A I po
		✓ Cell wall composition	
15.00			0.010
		✓ Nutrition	



		2. Selection methods	3
		✓ For Self pollinated	
		✓ For cross pollinated	
	1	✓ For vegetatively propagated plants	
		2 Habridination Dependure	3
		3. Hybridization- Procedure,	2500 a
		advantages & limitations	
		✓ For self pollinated	
	1	✓ For cross pollinated	
		✓ For vegetatively propagated plants	
	Quantitative	1. Quantitative Inheritance	2
	Inheritance	✓ Concept	1
	inneritance	✓ Mechanism	1
		✓ Examples	
-75.		<ul> <li>✓ Examples</li> <li>✓ Monogenic v/s Polygenic inheritance</li> </ul>	
-	2	* Miningerile 4/3 : 3/8-	Total-16
-			7 Total-16
5.	Inbreeding	1. Inbreeding depression	-
٠.	depression and	✓ Introduction	
	heterosis	✓ History	
		✓ Genetic basis of inbreeding	
		depression	
		2. Heterosis	2
	-	✓ Introduction	
		✓ Genetic basis of Heterosis	
		✓ Applications	
		▼ Applications	
		2	4
	Crop	1. Crop Improvement & breeding	4
	improvement	✓ Introduction	
	and breeding	✓ Mutation and its role in crop	
	a	improvement and breeding	
		✓ Polyploidy	
		✓ Distant hybridization	
100		✓ Role of biotechnology in crop	
		improvement	
4			
	AV		Total- 8



		✓ Bridges experiment	
		Coupling and repulsion	
	0 11	Recombination frequency	
		✓ Genetic mapping	10 0 E
			_
		2. Crossing over	4
		✓ Concept	
		✓ Crossing over in maize	
		✓ Mechanism of crossing over	
		✓ Types of crossing over	
		✓ Significance of crossing over	Total-12
3.	Mutation and	1. Wutation	2
	Chromosomal	✓ Introduction	-
	Aberrations	✓ General Characterstics	
-	2.00114110113	✓ Role of mutation	
		✓ Molecular basis of gene mutation	
		✓ Error in DNA replication	
		✓ Mutagens- Physical & Chemical	1
		Matagens Physical & Chemical	
	14 EQ. (	2. Numerical Chromosomal Changes	1
		✓ Euploidy	-
		✓ Polyploidy	
		✓ Aneuploidy	
		,	
	0.125.0	3. Structural Chromosomal changes &	1
		its effect on genetic level	
		✓ Deletions	
		✓ Duplications	
		✓ Inversions	
W1 5		✓ Translocations	
	5.4%	and the second second second	Total- 4
4.	Plant Breeding	1. Plant Breeding	2
	and amount of the	✓ General Introduction	
		✓ History of Plant breeding	1
		✓ Nature of plant breeding	
		✓ Objectives	
		2. Breeding systems	,
•		✓ Modes of Reproduction	3
		✓ Pollination control	
		✓ Activities in plant breeding	
		✓ Some important achievements	
		✓ Undesirable consequences	
		- Officestrable consequences	140,5
	Methods of	1. Introduction	
	Crop	✓ Centres of origin	3
		and the state of t	
	Improvement		
	Improvement	<ul><li>✓ Domestication of crop plants</li><li>✓ Plant genetic resources</li></ul>	



#### B.Sc. Semester- VI Genetics and Plant Breeding

S.No.	Units	Tonics	Lectures
and the second	make an appropriate to the	continue consiste a security of the second security of the second	Required
1.	Heredity	1. Brief life history of Mendel	1
		✓ Seven traits of pea plant	
		2. Terminologies	1
		3. Laws of Inheritance	2
		✓ Law of Dominance, Law of	
,	F 10	Segregation, Law of independent assortment	
	. =	4. Modified Mendelian ratios	4
		✓ Lethal genes, Multiple genes, Co-	
		dominance, Incomplete dominance, Epistasis	
		5. Chi Square test	2
		✓ General introduction, Formula, and its	
		uses	
		6. Pedigree Analysis	3
		✓ Autosomal linked, X-linked pedigree	, , , , , , , , , , , , , , , , , , ,
		7. Cytoplasmic Inheritance	3
		✓ General account, Maternal effect,	
		maternal inheritance, Shell Coiling	
	ing men it is	in Snail, Kappa particles in	
•	"	Paramecium, leaf variegation in Mirabilis jalapa, Male sterility	
		masins jaidpu, male sternity	
		8. Multiple Allelism	2
		✓ ABO blood group system & Rho blood	
		group	
		9. Pleitropism & Chromosome theory of	,
		inheritance	2
			Total- 20
2.	Sex	1. Sex determination & Sex-Linked	2
	determination	inheritance	
	And Sex-Linked Inheritance	✓ In Humans	
	inneritance	✓ In Plants	
	Linkage and	1. Linkage	6
	Crossing over	✓ Concept and history	-
The state of		✓ Types of Linkage	



	Charles and the second of the second second			
		3. Translation	3	
		✓ General account, Translation of		
		mRNA, Polysomes, Post- Translational modifications,		
		Ribosomes and their role in		
		protein synthesis, General		
		account of genetic code		
	E 14		2	
	Regulation of	1. Gene Expression		
	Gene	✓ Mechanism of gene expression, Control of gene expression in		= -
	Expression	prokaryotes		
	A. A. B. (E) a.	prokaryotes		
4		2. Lac operon	2	
		✓ Components of Lac operon,		
		Functioning of operon		
10		a Taustanhan operon model	1	A AND PROPERTY OF THE PROPERTY
		3. Tryptophian operer	Total-12	
		3. Tryptophan operon model	Comment of the second of the s	4. art professor a territor advisor de la particular



r				,	
	,		model)  ✓ Lipid fluidity pf membrane  ✓ Semi-permiability of Membrane  ✓ Functions	* ,	
			2. Cell Wall  ✓ Introduction  ✓ Structure  ✓ Chemical Nature of cell wall  ✓ Functions of cell wall	2	
			3. Cell Cycle  ✓ Overview of Cell cycle	5	
gene incomplete and all treatment	THE STATE STATE OF THE STATE OF		✓ Mitosis- Stages of Mitosis, Significance of mitosis ✓ Meiosis- Stages & its significance ✓ Difference b/w Mitosis & Meiosis ✓ Molecular controls		<u>.</u>
			The state of the s	Total-12	
	4.	Genetic Material	2. Miescher to watson & Crick-Historic perspective, Griffith's &	3	
			Avery's transformation experiments, evidences from bacterial transformation, Hershey Chase bacteriophage experiment, Structure of DNA, Types of DNA, Pallindromic DNA, Repetitive DNA, Types of genetic material, Difference b/w DNA & RNA		
			3. DNA Replication  ✓ Semi-concervative method of DNA	3	
5-400 mm	and the second of the second o	active as turned, and a room	replication, DNA replication in prokaryotes, DNA replication in eukaryotes, Enzymology of DNA replication, Replication models, Semi discontinous RNA priming.	hottovorovitt har koodholustatata	TO MAKE BUTTON GENERAL WIND WINDS OUT
	- SERVIC			Total-6	
	5.	Transcription ( Prokaryotes & Eukaryotes)	<ol> <li>RNA         <ul> <li>Types of RNA ( mRNA, tRNA, rRNA),</li> <li>types of RNA polymerase.</li> </ul> </li> </ol>	1	
			<ol> <li>Transcription</li> <li>✓ Introduction, Molecular mechanism of transcription, promoter region, TATA box, Difference in RNA transcription in Prokaryotes &amp; Eukaryotes, RNA processing, Reverse transcription</li> </ol>	3	

The Control of the Co



			✓ Synthesis of protein within mitochondria		
			2. Chloroplast  ✓ Introduction, Ultrastructure, marker enzymes	3	
			✓ Chloroplast as semiautonomous organelle ✓ Chloroplast DNA ✓ Functions of Chloroplast  3. Endoplasmic Reticulum ✓ Introduction, Ultrastructure of ER, Types of ER, Functions	2	
			<ol> <li>Golgi bodies</li> <li>✓ Introduction, Ultrastructure &amp; Functions</li> </ol>	2	
			5. Lysosomes  ✓ Introduction, Structure, Types, Functions & Lysosomal diseases	2	
			6. Peroxisomes & Glyoxysomes  ✓ Occurrence, Structure, Functions &	3	and the second s
and an extended the second sec			7. Nucleus  ✓ General Introduction  ✓ Ultrastructure of Nucleus  ✓ Nuclear pore complex- Structure & Functions  ✓ DNA Packaging- Chromatin  ( Heterochromatin & Euchromatin)  ✓ Nucleolus- Structure, composition & functions  ✓ Ribosomes- Types, Structure & Functions	5 Total- 22	
·	3.	Cell Membrane & Cell Wall	1. Plasma Membrane  ✓ Introduction, Composition of Plasma membrane ( Carbohydrates, Proteins, Lipids & their functions)	5	
The same of the second same of t			✓ Structure ✓ Models of plasma membrane ( Lipid bilayer model, Danielle danson model, Robertson unit membrane model, Fluid mosaic		



#### B.Sc. V Semester Cell and Molecular Biology

Units	Topics	Lectures Required	
Techniques in Biology	1. Principles of Microscopy  ✓ Magnification power, Resolving power, Factors affecting resolving power	1	
-	2. Light Microscopy  ✓ Parts of Microscope  ✓ Bright field microscope  ✓ Dark field microscope  ✓ Sample preparation for light microscopy	1	
	3. Phase Contrast Microscopy	1	
	4. Fluorescence microscopy ✓ Working principle & its uses	1	
e e e e e e e e e e e e e e e e e e e	5. Confocal Microscopy  ✓ Working principle & its uses	1	
	<ul> <li>6. Electron microscopy</li> <li>✓ Types of electron microscope</li> <li>✓ Working- Transmission electron microscope &amp; Scanning electron microscope</li> </ul>	2	
	✓ Sample preparation of electron microscope		
, ,	7. X-Ray diffraction analysis  ✓ Principle & its uses	1	
The second secon		2	
- 46	<ul> <li>✓ Prokaryotic &amp; Eukaryotic cells</li> <li>✓ Cell Size &amp; shape</li> <li>✓ Components of Eukaryotic cell</li> </ul>		
Cell Organelles	1. Mitochondria  ✓ Introduction, Ultrastructure, marker enzymes, oxysomes, functions of mitochondria  ✓ Composition ✓ Semiautonomous nature	3	
	Techniques in Biology  Cell as a unit of	Techniques in Biology  1. Principles of Microscopy  Magnification power, Resolving power, Factors affecting resolving power  2. Light Microscopy  Parts of Microscope  Bright field microscope  Dark field microscope  Sample preparation for light microscopy  Working principle & its Uses  4. Fluorescence microscopy  Working principle & its uses  5. Confocal Microscopy  Working principle & its uses  6. Electron microscopy  Types of electron microscope  Working- Transmission electron microscope  Working- Transmission electron microscope  Sample preparation of electron microscope  Sample preparation of electron microscope  7. X-Ray diffraction analysis  Principle & its uses  Cell as a unit of  Life  1. Cell  The Cell Theory  Prokaryotic & Eukaryotic cells  Cell Size & shape  Components of Eukaryotic cell  Introduction, Ultrastructure, marker enzymes, oxysomes, functions of mitochondria	Techniques in Biology  1. Principles of Microscopy  Magnification power, Resolving power, Factors affecting resolving power  2. Light Microscopy  Parts of Microscope  Bright field microscope  Sample preparation for light microscopy  Working principle & its Uses  4. Fluorescence microscopy  Working principle & its uses  5. Confocal Microscopy  Working principle & its uses  5. Confocal Microscopy  Working principle & its uses  6. Electron microscopy  Working-Transmission electron microscope  Working-Transmission electron microscope  Sample preparation of electron microscope  Sample preparation of electron microscope  T. X-Ray diffraction analysis  Principle & its uses  Cell as a unit of  1. Cell  The Cell Theory  Prokaryotic & Eukaryotic cells  Cell Size & shape  Components of Eukaryotic cell  1. Mitochondria  Introduction, Ultrastructure, marker enzymes, onysomes, functions of mitochondria  Composition



1				Total-6		
-	5.	Role of Plants in relation to human welfare (b)	1. Forestry  ✓ What is forestry?  ✓ General introduction  ✓ Importance of forestry	2		
			<ul><li>✓ Its utilization</li><li>✓ Commercial aspects</li></ul>		•	
			<ul> <li>Wood</li> <li>✓ What is wood?</li> <li>✓ General account</li> <li>✓ Different types of wood and its function</li> <li>✓ Seasoning of wood</li> <li>✓ Defects of wood</li> </ul>	2	·	
			<ul> <li>3. Ornamental plants of India</li> <li>✓ General account</li> <li>✓ Different ornamental plants found in India</li> <li>✓ Importance or Uses</li> </ul>	2	*	



					. 1
			3. Biodiversity legislation and conservation, Biodiversity information management and communication	1	,
				Total-6	2.
gg or the second	3.	Conservation of Biodiversity	1. Conservation  ✓ Genetic diversity  ✓ Species diversity  ✓ Ecosystem diversity	1	We need the state
			2. Types of conservation  ✓ In-situ conservation- Introduction and examples  ✓ Ex-situ conservation- Introduction and examples	2	
e≅ que de 20 € ligre, 774 a			3. Social approaches to conservation and Biodiversity awareness programmes	1	(Date of Spiriters of the Spiriters of t
·	and the second s	CONTRACTOR	<ul> <li>4. Sustainable development</li> <li>✓ Introduction</li> <li>✓ Need of sustainable development</li> <li>✓ Conferences &amp; projects regarding sustainable development</li> </ul>	2	P-THE ROOF OF COLUMN
		· constant parameters	**************************************	Total-6	
	4.	Role of plants in relation to human welfare (a)	1. Cereals  ✓ Wheat - General account and its role  ✓ Rice- General account and its role	2	
			<ul><li>Z. Pulses</li><li>✓ General account</li><li>✓ Examples</li><li>✓ Role</li></ul>	2	
			3. Fruits  ✓ General account  ✓ Examples  ✓ Types of fruit	1	
•			<ul> <li>✓ Role</li> <li>4. Alcoholic beverages</li> <li>✓ General account</li> <li>✓ Distilled beverages</li> <li>✓ Non-distilled beverages</li> <li>✓ Role</li> </ul>	1	



#### **B.Sc. Semester- IV**

### Skill Enhancement Course Plant Diversity and Human Welfare

S.No.	Units	Topics	Lectures Required	
1.	Plant diversity	1. Biodiversity	2	
A	and its scope	✓ General Introduction		and the same of th
		✓ Genetic diversity		•
		✓ Species diversity		
18	1	✓ Plant diversity at the ecosystem		
		level		
		2. Agrobiodiversity	2	
		✓ General introduction		
		✓ Cultivated plant taxa		
		✓ Wild taxa		
		3. Values and uses of biodiversity	2	
	9 0	✓ Ethical and Aesthetic value		
		✓ Precautionary principle	(4)	
		✓ Methodologies for valuation		
		✓ Uses of plants		
		✓ Uses of microbes		
			Total-6	
2.	Loss of	1. Loss of Biodiversity	1	
	Biodiversity	✓ Loss of genetic diversity	1	•
		✓ Loss of species diversity		-
		✓ Loss of ecosystem diversity		
		✓ Loss of Agrobiodiversity		
			* *	
		2. Projected scenario for	1	
		biodiversity loss		
			1	
	Management of	1. Management	1	
	Plant biodiversity	✓ What are the needs for management?	1	
		✓ Why management is important?	( 84)	
		✓ Organizations associated with biodiversity management		
		2. Methodology for execution	2	
		✓ IUCN	-	
		✓ UNEP		
		✓ UNESCO		
		✓ WWF		
0-1-23		✓ NBPGR		



Plant Growth Regulators	Rhizoblum species.  1. Plant growth regulators  General Introduction  Importance  Auxin, Gibberelllins, Cytokinins, ABA, Ethylene.  2. Discovery & Physiological Roles of Plant growth regulators	2	
Plant response to light and temperature	1. Photoperiodism  ✓ Short day plants  ✓ Long day plants  ✓ Day neutral plants  ✓ Short-long day plant & Long-short day plant  ✓ Importancef light & dark period  ✓ Floral horomone- Florigen	2	
	2. Phytochrome  ✓ Discovery & its structure  ✓ Red & Far-red light responses on photomorphogenesis	2	
	3. Vernalization  ✓ General account  ✓ Devernalization  ✓ Vernalization & Gibberellins	2 Total- 20	



		Total- 12
4. Respiration	1. Respiration  ✓ Types of Respiration ✓ Respiratory Substrates	1
	2. Mechanism of Respiration	2
PER SERVICE SERVICES SERVICES OF SERVICES AND ACCOUNT OF	✓ Glycolysis ✓ TCA cycle	
	3. Oxidative Phosphorylation  ✓ The Chemiosmotic hypothesis  ✓ Difference b/w Oxidative phosphorylation & phosphorylation	1
	4. Fermentation, Relation b/w Anaerobic respiration & Fermentation, Respiratory Quotients, Factors affecting the rate of respiration	1
	5. Glyoxylate & Oxidative Pentose Phosphate Pathway	1
		Total- 6
5. Enzymes	1. Structure & Properties  ✓ Introduction of Enzyme  ✓ Apoenzyme & Co-factors  ✓ Classification of enzymes	1
	2. Mechanism os enzyme catalysis  ✓ Theories of Mechanism of enzyme action (Enzyme substrate complex Lock & Key, Induced fit theory)  ✓ Factors affecting enzyme action ✓ Isozymes, Zymogen ✓ Michaelis menten equation	<b>2</b>
	3. Enzyme inhibition  ✓ Reversible Inhibition  ✓ Non-reversible inhibition  ✓ Allosteric inhibition	1
Nitrogen meta	bolism  1. Biological Nitrogen fixation  ✓ Nitrogen cycle  ✓ Nitrogen fixing prokaryotes	2

.



1						- NAME OF STREET
			3,	Role of essential elements	2	
			✓	Specific role of main essential		
		4 9		elements		
		27	✓	Specific role of trace essential		
				elements		
		*	4	Availability of a large sales to plants		•
			<b>4.</b>	Availability of mineral salts to plants Carbonic acid exchange theory	1	
		Δ Κ	·	Contact exchange theory		
				Contact exchange theory	S	
			5.	Active transport, Passive transport,	2	
				carriers, channels & pumps		
		Translocation in				
		phloem				
		0	1.	Composition of phloem sap	2	
		, ,	✓	o o minutal a ci an siocación		
		2	✓	Upward translocation		
			_		_	
			2.	Girdling experiment & Pressure flow	2	
a the second second second				model		
			3.	Phloem loading & unloading	2	
				Tillociii loadiiig & diiloadiiig	Total- 14	
	3.	Photosynthesis	1.	Photosynthetic pigments	3	
				Structure of Chl a, b, Xanthophylls,		
			100	Carotene		
				Mechanism of absorption of light		
			✓	Red drop & Emerson's enhancement		
				effect		
3-3		100	,	Tura minus automatama		
	50			Two pigment systems PS I & PS II		
			/		4	
			1			
		Δ		photophosphorylation		
			✓	Mechanism of ATP synthesis	-	
•				190. 1 190. 17	7	
	11,50		3.	Different pathways of carbon	3	
	- 1			fixation		
					-	
			1	C4 cycle		
		He was a second	1	Difference b/w C3 & C4 cycle		
		C. Continues and C.	\ \ \	CAM pathway		
	- 16		1	Photorespiration	2	
	V. 14		4.	• 500 at 1000	2	
	a Karama a salah	gelia i je je z		Process of photorespiration	20 0	
		E			1	ı



# B.Sc. IV Semester Plant Physiology and Metabolism

.No	Units	Topics	Lectures Required
1.	Plant water relation	Importance of water to plant life	1
Carl House		2. Water & its components	2
	7. 1	✓ What is water potential?	
		✓ Physical properties of water	
		✓ Plant cell as osmotic system	
	8	✓ Diffusion pressure deficit	V =
		✓ Components of water potential-	-
	Tall X	Matric potential, Osmotic potential,	
		Pressure potential	
7		District Control of the Control of t	
		3. Transpiration & its Significance	3
	A STATE OF THE STA	✓ What is Transpiration?	
	2	✓ Types of transpiration	
	11 11 11 11	✓ Measurement of transpiration by	
	3.4	different methods	
		✓ Mechanism of stomatal opening &	
		closing	
		✓ Difference b/w Transpiration &	
		Evaporation	
	8 8	✓ Significance of Transpiration	
Arms.	The residence of the state of t	4. Factors affecting transpiration	ert ka 🕶 er aransamannen senne
		✓ Plant factors	
		✓ Environmental factors	V
		5. Root Pressure, Guttation,	1
		Difference b/w transpiration &	
		guttation, Anti-transpirants & its	
		role	
7	F	2 * No. 11 2 A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Total- 8
2.	Mineral Nutrition	1. Essential elements	2
		✓ Major elements	
		✓ Micro elements	
		1 2 2 2 2 2 2	
		2. Criteria of essentiality of elements	1



5. Embryo and Endosperm  1. Endosperm  Introduction  Structure and its types  Histology and functions  2. Embryo  Embryo development in dicotyledons  Embryo- Endosperm relationship  Apomixis and Polyembryony  1. Apomixis  Definition  Non- recurrent apomixis  Recurrent apomixis  Parthenogenesis  Apospory  Significance  2. Polyembryony  Definition  Types  Causes & Significance  Experimental induction of polyembryony			<ul> <li>✓ Development</li> <li>✓ Seed appendages</li> <li>✓ Seed dispersal mechanism- by wind, water, animals etc</li> </ul>	Total- 16
2. Embryo  ✓ Embryo development in dicotyledons  ✓ Embryo development in monocotyledons  ✓ Embryo- Endosperm relationship  Apomixis and Polyembryony  1. Apomixis  ✓ Definition  ✓ Non- recurrent apomixis  ✓ Recurrent apomixis  ✓ Parthenogenesis  ✓ Apospory  ✓ Significance  2. Polyembryony  ✓ Definition  ✓ Types  ✓ Causes & Significance  ✓ Experimental induction of	5.		<ul><li>✓ Introduction</li><li>✓ Structure and its types</li></ul>	3
Polyembryony  1. Apomixis  ✓ Definition  ✓ Non-recurrent apomixis  ✓ Recurrent apomixis  ✓ Parthenogenesis  ✓ Apospory  ✓ Significance  2. Polyembryony  ✓ Definition  ✓ Types  ✓ Causes & Significance  ✓ Experimental induction of			<ul> <li>✓ Embryo development in dicotyledons</li> <li>✓ Embryo development in monocotyledons</li> <li>✓ Embryo- Endosperm</li> </ul>	5
Definition     ✓ Types     ✓ Causes & Significance     ✓ Experimental induction of		The state of the s	<ul> <li>✓ Definition</li> <li>✓ Non- recurrent apomixis</li> <li>✓ Recurrent apomixis</li> <li>✓ Parthenogenesis</li> <li>✓ Apospory</li> </ul>	4
			<ul><li>✓ Definition</li><li>✓ Types</li><li>✓ Causes &amp; Significance</li></ul>	4 Total- 16



		2. Role of cambium in secondary growth in root & stem	4
		3. Wood- types, formation and	2
	10.1.	uses	Total- 12
3 .	Adaptive and protective systems	<ol> <li>Epidermis, Cuticle &amp; Stomata         ✓ General account         ✓ Functions</li> <li>Adaptation of Xerophyte &amp;         Hydrophytes         ✓ General account         ✓ Morphological &amp;</li> </ol>	4
		Anatomical features  Difference b/w Xerophytes  & Hydrophytes	
			Total-8
4.	Structural organization of flower	Structure of Anther & Pollen     ✓ Mature anther- Structure     ✓ Structure of pollen- pollen     viability, pollen     germination	3
	Pollination &	2. Ovule  ✓ Structure  ✓ Types of ovules  ✓ Embryo sac- Types  ✓ Organization and ultra  structure of mature  embryo sac	5
Marketin to all company 4.6	Fertilization	1. Pollination	3
		<ul> <li>✓ Definition</li> <li>✓ Types of pollination</li> <li>✓ Mechanism of pollination</li> <li>✓ Attraction and rewards of pollinators</li> <li>✓ Self- incompatibility</li> </ul>	
		Jen meempationity	
		<ul> <li>Z. Fertilization</li> <li>✓ General account</li> <li>✓ Double fertilization and its significance</li> </ul>	2
		3. Seed  ✓ Seed and its structure	3



# B.Sc. Semester-III Plant Anatomy and Embryology

S.No	Units	Topics	Lectures Required
1.	Meristematic and Permanent Tissue	<ol> <li>Meristematic Tissue</li> <li>✓ General Characterstics</li> <li>✓ Role</li> <li>✓ Types of Meristem</li> </ol>	1
		<ul> <li>2. Root Apical Meristem</li> <li>✓ General introduction</li> <li>✓ Theories regarding the root apical meristem</li> </ul>	2
		3. Shoot Apical Meristem  ✓ General introduction  ✓ Theories regarding the shoot apical meristem	2
		<ul> <li>4. Permanent tissue</li> <li>✓ General characteristics</li> <li>✓ Types of Permanent tissue</li> <li>✓ Simple permanent tissue-Characteristics, types, functions.</li> <li>✓ Complex permanent tissue-Characteristics, types, functions.</li> </ul>	3
*			Total- 8
2.	Organs	<ol> <li>Anatomy of dicot plant</li> <li>✓ Structure of dicot root, stem and leaf</li> </ol>	2
	Socondary Growth	Anatomy of monocot plant     ✓ Structure of monocot root,     stem and leaf     ✓ Difference b/w dicot and     monocot structures	2
	Secondary Growth	<ol> <li>Vascular cambium</li> <li>✓ Origin, structure and function</li> <li>✓ Seasonal activity</li> </ol>	2





		<ul><li>✓ Flora</li><li>✓ Keys- Single access and multi access</li></ul>	_
	Taxonomic evidences	1. Taxonomic evidences	5
		✓ General introduction	
		✓ Taxonomical evidences from	
		naturalogy cytology.	
,		phytochemistry, and molecular data	Total-12
			4
4.	Botanical	1.Botanical Nomenclature	-
	Nomenclature	✓ General introduction	
		✓ Rules of nomenclature	
		✓ Principles of ICBN	
	- 1 %i	✓ Ranks & Names	
		/ T: fightion	
		✓ Author citation and valid publication	8
		✓ Principles of priority and its	
		limitations	4
	Classification		1
	Ciussiiise	1.Types of Classification	
		✓ Bentham and Hooker's system of	
		classification	
		✓ Engler and Prantl's system of	
		classification	1
	Biometrics, Numerical		_
	taxonomy, and	1.Characters	
	cladistics	✓ Variations	
		✓ Operational Taxonomic units	
		✓ Selection of Characters	1
	*	s at a share and cluster	-
		2. Coding of Characters and cluster	
		analysis	1
		0 Stadegrams	_
		3. Phenograms & Cladograms	
		✓ Definition	
		✓ Differences	
			Total-11
		i delinguishing	10
5.	Families	1.Taxonomy, important distinguishing	10
-		characters, classification and economic	
		importance of the following families	
		✓ Ranunculaceae, Papaveraceae,	
	1.00	Caryophyllaceae, Malvaceae,	
•		Rutaceae, Fabaceae, Apiaceae,	
		Solanaceae, Apocynaceae,	
		Asclepidiaceae, Acanthaceae,	
		Lamiaceae, Euphorbiaceae,	
		Orchidaceae, Poaceae	



		✓ Xerosere		
+			Total- 17	1
2.	Ecosystem	1. Structure of Ecosystem	1	7
		✓ General Introduction		
		✓ Components of Ecosystem		1
	8	selectron Protections (special section )		1
		2. Energy flow	1	1
		<ol><li>Food chain &amp; Food web</li></ol>		
	A 100 TO 100 A	✓ General introduction		1
	2.5	✓ Types of Food chain	Е.	1
		4. Ecological pyramids	2	1
		✓ Pyramid of Number		1
		✓ Pyramid of Rumber		-
		✓ Pyramid of energy		
		y yrunna or energy		
- 1		5. Production and productivity	1	
- 1	11 1-5-	✓ Introduction		
		✓ Primary production processes		
,		✓ Productivity in different ecosystem		
		resident and the second		
		<ol><li>Biogeochemical cycles</li></ol>	2	
		✓ Introduction		
	The state of the s	<ul> <li>✓ Cycling of carbon, nitrogen &amp;</li> </ul>		
	1 1 1 1 1 1	phosphorus		
	Dhatasaananbu	1. Principle Biogeographical zones	2	
	Phytogeography	2. Endemism	1	
		Z. Litacinism		
		Liferance of A. Holler of Market and Section	Total- 10	
3.	Introduction to plant	1. Taxonomy	2	
	taxonomy	✓ Definition & Classification		
79		✓ Identification & Nomenclature		
		✓ Identification keys		
	Taxonomic Hierarchy	Ranks, categories and taxonomic	. 1	
	I axonomic meracity	groups	- 7	
		Proghs		
	Identification	1. Herbarium	2	
- 4	luentinication	✓ Definition		
		✓ Some important herbaria of the		
	111	world and india		
			1	
	- Mg	✓ Functions of herbarium		
		✓ Botanical gardens		
	1	2. Documentations	2	

.



Day-2 > Smag formation Day-3-3 Oxides of N&C & their Effect Day-4 > Oxides of is \$ 0 6 their Effect Day-5-> Petroleum & Minerals, Day-6 > Pollution by Chemicals, Chloroflweohydro-Day 7-> Chaliftical Methods to Measure Air poblibants

Day-8 > Continous Monitoring Construments

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Corthorall - mail

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PEMEGTER-IV Paler-IV (Environmental Chemistry) Juil-1 > Environment Introduction & Composition of atmosphere Vertical temperature & vertical estability atmosphere. fleat Budget of Earth Atmorphoric System. Day 4 > Biogeochemical Cycle of Carbon. Biograchemical Cycle of Mitrogen & Day-5-> Phosphorus. Cycle of Sulphur & Oxygen Day-6-> Biodishibutum of Elements. Day-7> If Unit -4 > Atmosphere Chemical & Photochemical reactions in atmosphere



Day 2 -> Exergonie & Endorgonie Reactions. Day 3 , Hydrolysis of ATP & Synthesis of ATP from # Bioinognic Clemity # Bio Envigetics & ATP Cycles Day-1 -> DNA Polymorisation. Metal Complexes in transmission of Energy Alucase Storage & Chlorophyll. Day 4 > Photosystem, P&I Model System. Day-5 >

The Court of the Court



SEMESTER-III Paler-III (Bioinorganic, Bioorganic, BioPhysical Chemistry - 2) => BioPhysical Chemistry Unit -> Biological Cells & its Constituents, Cell Membrane & Transport of ions Day 1 - Biological Cells, Enzymes. Day-2 - Structure & function of Proteins Days > DNA & RNA in living Bystem Day-4 > flelix Coil transition Day-5 > Ashucture & function of Cell Membrane Don transport through Cell Membrane Day-6 > Unit > Bio Envigetics Day 1 Standard free Energy Change in biological reactions.



Day-4 Reactivity for aliphatic & aromatic sa et a britgehead

Days > Reactivity in the attacking radicals & the Effect of solvent on reactivity

Days - Allylic halogeration (MBS).

Day 7 . Oxidation of aldehydes to Carboxylic acid & Auto-Oxidation

Days - Coupling of alkynes & anylation of Anomatic Compounds.

Day 9 , Sandmayer Reaction

Day 10 -> Hundrdicker Reaction

J-W - Free Parked Keading

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Sheet (

## SEMESTER-II

# Paper-I Edrganic Chemistry]

Unit-I > [Aromatic Electrophilic Substitution]

Day-1 ». Orientation & Reactivity, Energy Profile diagram.

Day-2 -> Ortho-Poura Ratio, ipso attack, Orientation in other ving system.

Day-3 - Reactivity in Substrate & Electrophile

Day-4 -> Vilsmeir Haak reaction, hattermann Koch
Reaction

Day-5 > Diazonium Coupling.

Unit-II -> Free Radical Reaction

Day 1 Types of free Radical Reaction

Day-d Free Radical Substitution Mechanism

Day 3 Mechanism of an avenutie Verbetrate



Day-3 Irving-William Series & Chelate Effects CE

Day-4 Factors affecting estability of Metal Complexors #

W.r.f. to Notive of Metal & ligand

Day-5 Detection of Complexorion in solution

Day-6 Determination of binary formation Constant by

PH-Metry. Method

Day-7 Determination of binary formation Constant by

Spectro photometric Method

modimes & boul 18

The consistence of the second of the second

Suppose & Court



# LESSON PLAN [M.SC.-CHEMISTRY] SEMESTER-I # Taper-I [ Inorganic Chemistry] Unit-1 - Other Chemistry & Bonding in Main Group Compounds Day-1 -> VSEPR Model & shortcomings 12 ay = 2 > flybridization & three Center bonds. Day-3 -> Benth Rule & Envigeties of hybridigation Day-4 -> PP-PT, PTI- dti bonding Day-5 > Walsh diagram for tri-& tetra atomic \$ 6 Unit-II > Metal - ligand Equilibria in Solution Day-1 > Thermodynamic & Kinetic Stability of Complexes. Day-2 > Ostiphise & Overall formation Constant

their interaction



### **Library Facilities**











### **Lab Facility**













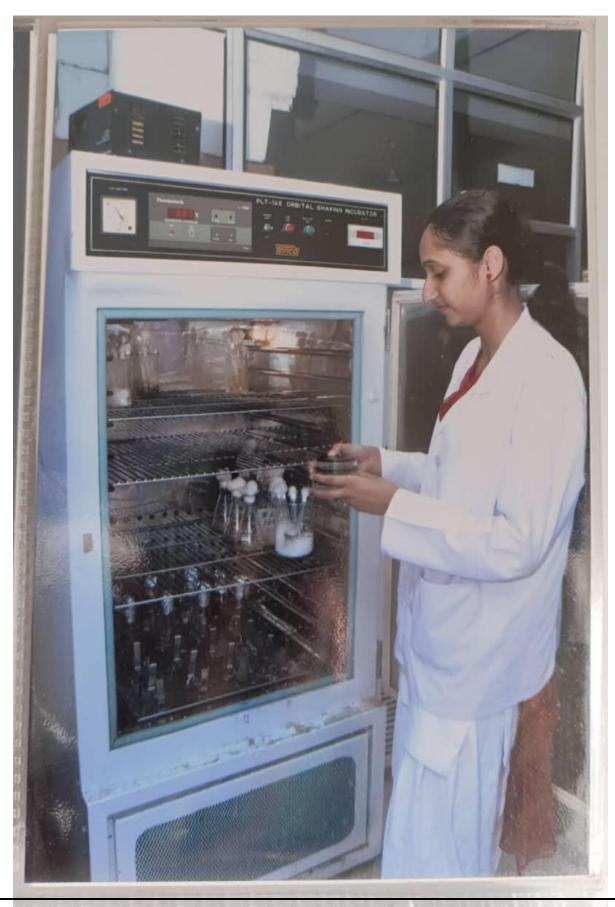










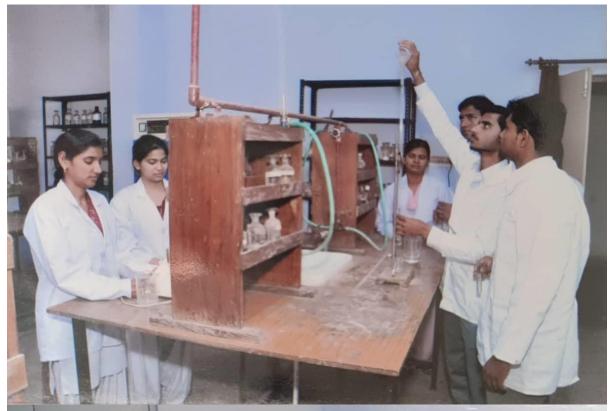
































## **Internal & External Date sheet and Duty chart**

# चिन्मय डिग्री कॉलेज, भेल, हरिद्वार

दिनांक : 03 / 02 / 2021

सेवा में,

सहायक कुलसचिव (परीक्षा) हे0न०ब०ग० विश्वविद्यालय श्रीनगर (गढ़वाल)

विषय – वर्ष 2019–20 की कोविड–19 के कारण छूटी हुई परीक्षाओं के प्रश्न पत्रों की सूचना के सम्बन्ध में। महोदय

निवेदन है कि चिन्मय डिग्री कॉलेज में उपर्युक्त विषय के सम्बन्ध में महाविद्यालय में किस दिन किन-किन विषय के प्रश्न पत्रों की परीक्षा है, का विवरण निम्नांकित है:

देनांक / दिन	कक्षा	विषय	प्रश्न पत्र का नाम	महाविद्यालय की मेल आईडी
04-02-2021 Thursday	M.Sc. 4th sem	Zoology	Zoology Endocrinology and Animal Behaviour principal@chinma	
05-02-2021 Friday	B.Sc. 6th sem	Physics	Quantam Mechanics	
	M.Sc. 4th sem	Zoology	Bio Chemistry & Immunoilogy	
06-02-2021 Saturday	M.Sc. 4th sem	Zoology	Applied Entomology	
	B.Sc. 6th sem	Chemistry	Molecule of life	
07-02-2021 Sunday	M.Sc. 4th sem	Zoology	Methodology in Entomology	
08-02-2021 Monday	B.Sc. 6th sem	Maths	Vector Calculus (SEC)	
09-02-2021 Tuesday	B.Sc. 6th sem	Botany	Biofertilizers (SEC)	
11-02-2021 Thrusday	B.Sc. 6th sem	Maths	Numerical Methods	1

(डा० आलोक अग्रवाल) कार्यवाहक प्राचार्य क्रियाहक प्राचार्य क्रियाय-डिग्नी-क्रीलेज, भेल, हरिद्वार



दिनांक : 01/02/2021

कॉलेज के निम्नलिखित शिक्षकों / कर्मचारियों को सूचित किया जाता है कि जिन छात्र / छात्राओं की अन्तिम सेमेस्टर की परीक्षायें कोविड–19 के कारण छूट गई थी, उनकी अन्तिम सेमेस्टर की परीक्षायें यूजीसी के निर्देशानुसार 30 जनवरी 2021 से आयोजित की जा रही है। हे0न0ब0ग0 विश्वविद्यालय की इन परीक्षाओं को सम्पन्न कराने हेतु निम्नलिखित सदस्यों की ड्यूटी लगाई जा रही है।

समय : प्रातः 11.30 से दोपहर 1.00 बजे तक

केन्द्राध्यक्ष : डा० आलोक अग्रवाल

सहायक केन्द्राध्यक्ष ः डा० पी० के० शर्मा 知

तृतीय श्रेणी कर्मचारी (काउन्टर ड्यूटी)

1. श्री राकेश गुप्ता

चतुर्थ श्रेणी कर्मचारी

श्री अमरपाल

श्री सोमपाल, स्वीपर

Minmay RHEW. Law.



दिनांक : 18/09/2020

सेवा में,

श्रीमान् परीक्षा नियन्त्रक हे०न०ब०ग० विश्वविद्यालय श्रीनगर (गढ़वाल)

विषय - ओ एम आर शीट के सम्बन्ध में।

महोदय,

निवेदन है कि आपके द्वारा प्रेषित ओ एम आर उत्तर पत्रक में 181201 से 183100 तक (कुल 1900) चिन्मय डिग्री कॉलेज में दिया गया है। परन्तु ओ एम आर शीट का बॉक्स खोलने पर बॉक्स के ऊपर 296001 से 298000 (कुल 2000) लिखित है। परन्तु वास्तव में बॉक्स के अन्दर 296701 से 297700 सीरीज तक की ओ एम आर शीट (कुल 1000) ही प्राप्त हुई हैं। आपके पत्रानुसार भी (कुल 1900) ओ एम आर शीट दर्शाई गई है, संज्ञान लेने का कष्ट करें। कृपया 250 ओ एम आर उत्तर शीट यथाशीघ्र भेजने का कष्ट करें।

धन्यवाद।

ARY

(डा० आस्त्रेक्ट्रावाल) Managad वीहक व्यवधीकः चिन्मय डिग्री केलिज भेल, हरिद्वार



दिनांक: 16/09/2020

निम्न कर्मचारियों को सूचित किया जाता है कि अपने विभागवार तथा परीक्षा कक्ष में प्रतिदिन विभाग बन्द होने के पश्चात तथा परीक्षा समाप्त होने पर परीक्षा कक्ष में प्रतिदिन सेनीटाईज मशीन द्वारा विभागवार / कक्षावार सेनीटाईज करने का कष्ट

कॉलेज के निम्नलिखित शिक्षकों / कर्मचारियों को सूचित किया जाता है कि दिनांक 19/9/2020 से बी०एस0सी0 तृतीय वर्ष एव एमएससी द्वितीय वर्ष (चतुर्थ सेमेस्टर) के छात्रों की हे०न०ब०ग० विश्वविद्यालय की मुख्य परीक्षा होगी। हे०न०ब०ग० विश्वविद्यालय की मुख्य परीक्षाओं को सम्पन्न कराने के लिये निम्नलिखित प्रकार से ड्यूटी लगाई जा रही है।

### प्रथम पाली

समय : बी०एस०सी० प्रातः 10.00 से 12.30 बजे तक

: डा० आलोक अग्रवाल के न्द्राध्यक्ष

सहायक केन्द्राध्यक्ष : डा० पी.के. शर्मा, डा० मनीषा 🗘

तृतीय श्रेणी कर्मचारी (काउन्टर ड्यूटी)

श्री राकेश लडोंरा श्री विक्रम सिंह नेगी

चतुर्थ श्रेणी कर्मचारी

श्री नईम अहमद

श्री राजेश कुमार

श्री यशपाल सिंह

श्री मोहन जोशी

श्री चन्दर सिंह

श्री सोनू

श्रीमती रोशन देवी, स्वीपर (प्रातः 6.30 बजे से )

Ordinasya Puelle College BHEL, Haridway



दिनांक : 16/09/2020

कॉलेज के निम्नलिखित शिक्षकों / कर्मचारियों को सूचित किया जाता है कि दिनांक 19/9/2020 से बी०एस०सी० तृतीय वर्ष एव एमएससी द्वितीय वर्ष (चतुर्थ सेमेस्टर) के छात्रों की हे०न०ब०ग० विश्वविद्यालय की मुख्य परीक्षा होगी। हे०न०ब०ग० विश्वविद्यालय की मुख्य परीक्षाओं को सम्पन्न कराने के लिये निम्नलिखित प्रकार से ड्यूटी लगाई जा रही है।

#### प्रथम पाली

समय : बी०एस०सी० प्रातः 10.00 से 12.30 बजे तक

केन्द्राध्यक्षः ः डा० आलोक अग्रवाल

सहायक केन्द्राध्यक्ष ः डा० पी.के. शर्मा, डा० मनीषा 🔰

तृतीय श्रेणी कर्मचारी (काउन्द्र ड्यूटी)

1. श्री राकेश लडोंरा

2. श्री विक्रम सिंह नेगी

चतुर्थ श्रेणी कर्मचारी

1. श्री नईम अहमद

2. श्री राजेश कुमार

3. श्री यशपाल सिंह

4. श्री मोहन जोशी

5. श्री चन्दर सिंहं

6 श्री सोन

श्रीमती रोशन देवी, स्वीपर (प्रातः 6.30 बजे से )

AAY

Principal

Minmaya Degree College

BHEL, Haridwar

प्राचार्य,





d \sus\hnb\letter (224)

### चिन्मय डिग्री कॉलेज, भेल, हरिद्वार

दिनांक : 29 / 11 / 2019

कॉलेज के निम्नलिखित शिक्षकों/कर्मचारियों को सूचित किया जाता है कि दिनांक 5/12/2019 से दिनांक 26/12/2019 तक एमएससी प्रथम एवं तृतीय सेमेस्टर के छात्रों की हे०न०ब०ग० विश्वविद्यालय की मुख्य परीक्षा होगी। हे०न०ब०ग० विश्वविद्यालय की मुख्य परीक्षाओं को सम्पन्न कराने के लिये निम्नलिखित प्रकार से ड्यूटी लगाई जा रही है।

प्रथम पाली

समय : प्रातः 7.15 से 11.30 बजे तक

केन्द्राध्यक्ष

ः प्रो० आलोक कुमार

सहायक केन्द्राध्यक्ष : डा० पी.के. शर्मा

तृतीय श्रेणी कर्मचारी (क्राइन्टर ड्यूटी)

श्री राहुल कुमार 槌

चतुर्थ श्रेणी कर्मचारी

श्री राजू

श्री राजेश कुमार, माइक्रो

द्वितीय पाली

समय : प्रातः 10.00 से 2:00 बजे तक

: प्रो0 आलोक कुमार केन्द्राध्यक्ष

सहायक केन्द्राध्यक्ष ः डा० पी.के. शर्मा

तृतीय श्रेणी कर्मचारी (काउन्टर ड्यूटी)

1. श्री राहुल कुमार 🕢

चतुर्थ श्रेणी कर्मचारी

श्री राजू

श्री राजेश कुमार, माइक्रो

तृतीय पाली

समय: प्रातः 1.00 से 4:00 बजे तक

केन्द्राध्यक्ष : डा० पी.के. शर्मा 5

सहायक केन्द्राध्यक्ष : डा० अजय कुमार

तृतीय श्रेणी कर्मचारी (काइन्टर ड्यूटी)

1. श्री राहुल कुमार 🕢

चतुर्थ श्रेणी कर्मचारी

श्री राजू 21 नू

श्री राजेश कुमार, माइक्रो 🗸 🗸 श्रीमती सुनीता देवी, स्वीपर (प्रातः 7 से 3 बजे तक)

Mariaya Degree Colle



# H.N.B. GARHWAL UNIVERSITY, SRINAGAR (GARHWAL) M.Sc./ M.Com/LL.M./III Semester Examination Schedule (Session 2019-2020)

			Paper & Da	ite			Time:	08AM10	AM.
Subject	05.12.2019	07.12.2019	10.12.2019	12.12.2019	14.12.2019	17.12.2019	19.12.2019	21.12.2019	23.12.2019
	Thursday	Saturday	Tuesday	Thursday	Saturday	Tuesday	Thursday	Saturday	Monday
Anthropology (MSc/MA)	C-013 Med Anthro I	C-014 Med Anthro II	E-01 (A/B) Appl & Action Anthro	E-02 (A) Human Evol & Var / (B)Tribal India	E-03 (A) Human Growth Dev / (B) Theory of Comm	E-04 (A) Human Cytogenetics/ (B) Linguistic Anthro	Self Study		
Agronomy	Dry Land Farming	Management of Problem Soils	Modren Concept in Crop Production	Crop Ecology	Cropping Systems and Sustainable Ag	Soil Taxonomy Survey and Remote Sensing	Storage Insect Pest and their Mgt	Self Study	
Ag. Botany	Population and Biometrical Genetics	Seed Production Technology	Breeding Field Crops-I (Kharif)	Molecular Genetics	Crop Physiology	Self Study			
Biotechnology	C-013 Bioinfo, Legal Biotech & Bio Busi Mgmt	C-014 Recom DNA Tech. & Genomics	E-01(a) Food & Bev Biotech /(b) Research Method / (c) Chemical Sci & Bio	E-02 (a) Pharma Biotech & Drug Design / (b) Plant Biotech / (c) Advance Bioinformats	Self Study				
Botany	C-013 Plant Physiology & Biochem	C-014 Ecology & Remote Sensing	E-01 ( A to D )	E-002 (A toD )	Self Study				
Biochemistry	C-014 Mol Biology	C-015 Enzymology	E-001Methods in Mol Biolology	E-002 Clinical Biochem		E-003 Outline of Biotech	Self Study		
Chemistry	C-615 Organomettalic Chem / 018 Org Synth Photochem / 021 Chem of Materials	E-001-Spectro X-ray & Solid State	E-02-Bioinorg , Bioorg , Biophy Chem 1	E- 05(B) Spectroscopy & Solid Stater 08(C) Liquid State		E-04(A) Analytical Chem / 06(B) Organomet Reagents & Org Synthesis	E-07(B) Medcinal Chemistry	Self Study	
Environmental Science	C-013 Env Economis Env Sociology and Surist Dpt	C-014 Remote Sensing GIS and Env Statistics	E-02 Env Gensci and Disaster mgt.	E-03 BicDiversity Conservation and Restoration Ecology	Self Study				
Geology	C-C13 Igneous Petrology &Geochemistry	C-014 Engg Geology	E-001 Sedi & Metamorphic Petrology	E-002 Mineral Exploration & Mining	Self Study			1	
Home Science	Public Nutrition	Advanced Nutrition	Nutrition Management and Health	Netrition in emergencies and Disasters	Food Hygiene and Sanitation		Self Study		
Horticulture	C-012 Advances in Post Harvest Tech & Mgmt of Fruit & Veg	C-013 Protected Cult. of Hort Crops	C-014 Advances in Floriculture & Landscaping	E-001 Growth & Dev. of Plants	E-002 Dry Land Horticulture	E-003 Advances in Breeding of Veg Crops	Sen Study		
Forestry	Corre Agraforestra System	C-017 - 3 office Proposers tentine C-021 S-15 Water Mgmt	C - 17 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Carterines	Treesenses E-010 Fred Trees & Shrubs	Extra Star agor mi Extra A	Entit But solution & n	Ecc. ~, see	Flacticus Forestry E-013 Watersheed Management



## M.Sc. (IT) First Semester (New course)

Time 11-01 PM

14-12-2019	Saturday	Computer Funda
16-12-2019	Monday	Computer Fundamental and Programming in C
18-12-2019	Wednesday	Mathematical Foundation of computer Science Digital Electronics and computer systems Architecture
20-12-2019	Friday	Structured system Analysis and design
23-12-2019	Monday	Accounting and Financial Management

## M.Sc.(IT) Third Semester(New course)

Time 11-01 PM

17-12-2019	Tuesday	Introduction to web Technology		
19-12-2019	Thursday	Data communication and networks		
21-12-2019	Saturday	Analysis and design of Algorithms		
23-12-2019 Monday Computer Internet T		Computer Graphic Internet Technology Programming in Java		
26-12-2019	Thursday	Programming in visual basic Advanced RDBMS Distributed and Parallel computing		

#### M.Sc. (CS) First Semester

Time 11-01 PIVI

14-12-2019	Saturday	Computer Fundamental and Programming in C		
16-12-2019	Monday	Combinatorics and graph Theory		
18-12-2019	Wednesday	Relational database management system		
20-12-2019	Friday	Digital electronics and computer system Architecture		
23-12-2019	Monday	Operating system with case study of UNIX/LINUK		

#### M.Sc.(CS) Third Semester

Time 11-01 PM

17-12-2019	Tuesday	Networks security and cryptography		
19-12-2019	Thursday	Design and analysis of Algorithms		
21-12-2019	Saturday	Mobile and wireless computing		
23-12-2019	Monday	Computer Graphic X  Cornputer organization X  CH  CH  CH  CH  CH  CH  CH  CH  CH  C		
26-12-2019	Thursday	Compiler designing X Human computer Interaction	Τ.	

#### B.B.A. First Semester (CBCS)

11-01PM

16-12-2019	Monday	Management & Organization Behaviour	
18-12-2019	Wednesday	Business Statistics	
20-12-2019	Friday	Entrepreneurship development	
21-12-2019	Saturday	Environment Science (AECC)	
		B.B.A. Third Semester(CBCS) Time 1161 PM	
17-12-2019	Tuesday	Managerial Economics	
19-12-2019	Thursday	Principles of marketing	
21-12-2019	Saturday	Management Accounting	
23-12-2019	Monday	Econometrics / India's diversity and Business	
26-12-2019	Thursday	IT Tools for Business / Personality development and communications skills /E Commerce / Statistical software packages	



### H.N.B. GARHWAL UNIVERSITY, SRINAGAR (GARHWAL) Post Graduation Main/Back Paper Examination Schedule (Session 2019-20)

Date & Day	Paper	Time: 02-04 PM.
Dute a Day	raper	M. Sc. / M. Com/ LL.M. I Semester
06-12-2019 Friday	I	Anthropology (M.A.)/ Agronomy / Ag.Botany/ Botany/ Biotechnology/ Biochemistry/ Chemistry/ Environmental Science/ Forestry/ Geology/ Horticulture /Himalayan Aquatic Biodiversity/ Mathematics (M.A.)/ Microbiology/ Medicinal & Aromatic Plants/ Physics/ Pharmaceutical Chemistry/ Rural Technology/ Remote Sensing/ Seed Science/ Statistics (M.A.)/ Zoology.  M.Com/ LL.M
09-12-2019 Monday	li	Anthropology (M.A.)/ Agronomy / Ag.Botany/ Botany/ Biotechnology/ Biochemistry/ Chemistry/ Environmental Science/ Forestry/ Geology/ Horticulture/ Himalayan Aquatic Biodiversity/ Mathematics (M.A.)/ Microbiology/ Medicinal & Aromatic Plants/ Physics/ Pharmaceutical Chemistry/ Rural Technology/ Remote Sensing/ Seed Science/ Statistics (M.A.)/ Zoology M.Com/ LL.M
11-12-2019 Wednesday	111	Anthropology (M.A.)/ Agronomy / Ag.Botany/ Botany/ Biotechnology/ Biochemistry/ Chemistry/ Environmental Science/ Forestry/ Geology/ Horticulture /Himalayan Aquatic Biodiversity/ Mathematics (M.A.)/ Microbiology/ Medicinal & Aromatic Plants/ Physics/ Pharmaceutical Chemistry/Rural Technology/ Remote Sensing/ Seed Science/ Statistics (M.A.)/ Zoology.  M.Com/ LL.M
13-12-2019 Friday	IV	Anthropology (M.A.)/ Agronomy / Ag.Botany/ Botany/ Biotechnology/ Biochemistry/ Chemistry/ Environmental Science/ Forestry/ Geology/ Horticulture /Himalayan Aquatic Biodiversity/ Mathematics (M.A.)/ Microbiology/ Medicinal & Aromatic Plants/ Physics/ Pharmaceutical Chemistry/Rural Technology/ Remote Sensing/ Seed Science/ Statistics (M.A.)/ Zoology.  M.Com/ LL.M
16-12-2019 Monday	V	Anthropology(M.A.) / Agronomy / Forestry / Geology / Horticulture/ Mathematics/ Medicinal & Aromatic Plants/ Rural Technology/ Seed Science. M.Com/ LL.M
18-12-2019 Wednesday	VI	Forestry M.Com/ LL.M

Controller of Examinations Dated:20-11-2019

#### Ref: Conf/2019

Copy to the following for information and necessary action:
1-Dean of Schools/ Director of Campuses/ All Principals.
2-Registrar/ Dy. Registrar (Exam)/ O.S. Secrecy, H.N.B. Garhwal University, Srinagar (Garhwal).

3- System Manager with the request that the above examination schedule may kindly be uploaded in the University website.

Controller of Examinations



#### चिन्मय डिग्री कॉलेज, मेल, हरिद्वार आन्तरिक परीक्षा कार्यक्रम

दिनांक 03/12/2021

चिन्मय हिग्री कॉलेज के बीएससी प्रथम, तृतीय एवं पंचम सेमेस्टर के समस्त छात्र/छात्राओं को सूचित किया जाता है कि उनकी वर्ष 2021–22 की सेशनल (आन्तरिक) परीक्षाये निम्नलिखित कार्यक्रम के अनुसार आयोजित की जायेगी:–

दिनांक	समय	समय	समय
	9.30-10.30	11.00-12.00	12.30-1.30
बीएससी	प्रथम सेमेस्टर	तृतीय सेमेस्टर	पंचम सेमेस्टर
20 / 12 / 2021	बॉटनी / गणित Botany/Maths	बॉटनी / गणित '64+ ने। = 135 मि Botany/Maths	पंचम समस्टर बॉटनी/मणित 67 + 79 = 196 (ह Botany/Maths
21 / 12 / 2021	जूलोर्जी / फिजिक्स Zoology/Physics	जूलोजी / फिजिक्स Zoology/Physics	Botany/Maths Discipline specific Elective Course.  অ্লাড়া / ফিজিক্ম Zoology/Physics
22 / 12 / 2021	Ability Enhancement (AECC) Compulsory Course (All Groups)	Skill Enhancement Course	Skill Enhancement Course
	अंग्रेजी English	पेस्टीसाइड, / कम्प्यूटर साइंस एवं माइक्रोबाइलोजी. Pesticide Chem. for Bio & Maths Group Computer Sci. for Computer Group Microbiology for Microbiology Group.	फिजीक्स, गणित एवं कम्प्यूटर ग्रुप के लिये जुलोजी, बायो एवं माझको ग्रुप के लिये Physics for Maths & Comp. Group Zoology for Bio. & Micro Group कैमिस्ट्री/माझकोबाइलोजी / कम्प्यूटर विज्ञान
23 / 12 / 2021	कैमिस्ट्री / माइक्रोबाइलोजी / कम्प्यूटर विज्ञान Chemistry/Microbiology/Com puter Sci.	कँमिस्ट्री / माइक्रोबाइलोजी / कम्प्यूटर विज्ञान Chemistry/Microbiology/Computer Sci.	कामस्ट्रा / माइक्राबाइलाजा / कम्प्यूटर ।पश्चान Chemistr <sub>/</sub> /Microbiology/Computer Sci.

उपरोक्त परीक्षायें सभी छात्र/छात्राओं के लिये अनिवार्य है। यदि कोई भी छात्र/छात्रा परीक्षा में अनुपस्थित रहता है तो इराका समस्त उत्तरदायित्व छात्र/छात्रा का होगा।

डाo पीo केo शर्मा इंचार्ज 

दिनांक : 6/12/2021

कॉलेज के निम्नलिखित शिक्षकों / कर्मचारियों को सूचित किया जाता है कि दिनांक 20, 21, 22, 23 दिसम्बर 2021 को बीएससी प्रथम, तृतीय, एवं पंचम सेमेस्टर के छात्रों की हे०न०ब०ग० विश्वविद्यालय के अन्तर्गत इंटरनल परीक्षा होगी। हे०न०ब०ग० विश्वविद्यालय के अन्तर्गत इंटरनल परीक्षाओं को सम्पन्न कराने के लिये सभी सदस्य समयानुसार अपनी ड्यूटी पर उपस्थित हो।

डा0 पी0 के0 शर्मा

डा० मनीषा

समय : प्रातः 9.00 से 11:00 बजे तक (प्रथम सेमेस्टर)

काउन्टर ड्यूटी (तृतीय श्रेणी कर्मचारी)

श्री राकेश गुप्ता

चतुर्थ श्रेणी कर्मचारी

श्री यशपाल सिंह

श्री अमरपाल

श्री नईम अहमद

समय : प्रातः 10% से 1:00 बजे तक (तृतीय सेमेस्टर) तृतीय श्रेणी कर्मचारी (काउन्टर ड्यूटी)

श्री राकेश लडोंरा

चतुर्थ श्रेणी कर्मचारी

श्री मोहन चन्द जोशी 🍼

श्री ज्ञानप्रकाश बड़थ्वाल

श्री राजेश कुमार 🎉

समय : दोपहर 1200 स्से 3:00 बजे तक (पंचम सेमेस्टंर) तृतीय श्रेणी कर्मचारी (काउन्टर ड्यूटी)

श्री विक्रम सिंह नेगी चतुर्थ श्रेणी कर्मचारी

श्री अशोक कुमार 📿 श्री जयप्रकाश 👉 छन्।

श्री राजबीर सिंह



दिनांक : 24/6/2022

कॉलेज के निम्नलिखित शिक्षकों एवं शिक्षणेत्तर किमयों को सूचित किया जाता है कि दिनांक 5 जुलाई 2022 बी०एस०सी० चतुर्थ एवं षष्ट सेमेस्टर की परीक्षायें प्रारम्भ हो रही है। जिसमें निम्न प्रकार से ड्यूटी लगाई गयी है कृपया समयानुसार अपनी ड्यूटी पर उपस्थित होने का कष्ट करें।

समय : प्रातः 7.15 से 10:30 बजे तक चतुर्थ एवं षष्ट सेमेस्टर डा0 आलोक अग्रवाल, केन्द्राध्यक्ष,

- 1. डा० मनीषा, सहायक केन्द्राध्यक्ष
- 2. डा० पी० के० शर्मा, सहायक केन्द्राध्यक्ष 💯

काउन्टर ड्यूटी, तृतीय श्रेणी कर्मचारी

- 1. श्री विक्रम सिंह नेगी, चतुर्थ सेमेस्टर
- 2. श्री राकेश गुप्ता, षष्ट सेमेस्टर

## चतुर्थ श्रेणी कर्मचारी

- 1. श्री राजबीर सिंह उपवी
- 2. श्री अमर पाल भूगी
- 3. श्री गौतम महतो विशि
- 4. श्री मोहित कुमार, एम.एस.सी. रसायन विज्ञान
- श्री राहुल थापा, पुस्तकालय

प्राचार्यः प्राचार्यः १८८४: Carld av





दिनांक : 17/2/2022

कॉलेज के निम्नलिखित शिक्षकों एवं शिक्षणेत्तर कर्मियों को सूचित किया जाता है कि दिनांक 22 फरवरी से 31 मार्च 2022 तक बीएससी तृतीय एवं पंचम सेमेस्टर के छात्रों की हे0न0ब0ग0 विश्वविद्यालय के अन्तर्गत मुख्य परीक्षा होगी। हे0न0ब0ग0 विश्वविद्यालय के अन्तर्गत कराने के लिये सभी सदस्य समयानुसार अपनी ड्यूटी पर उपस्थित हो।

समय : प्रातः 7.15 से 10:00 बजे तक (तृतीय एवं पंचम सेमेस्टर) डा0 आलोक अग्रवाल (केन्द्राध्यक्ष)

- 1. डा० मनीषा (सहायक केन्द्राध्यक्ष)
- 2. डा0 पी0 के0 शर्मा (सहायक केन्द्राध्यक्ष) रू∕

# काउन्टर ड्यूटी (तृतीय श्रेणी कर्मचारी)

1. श्री राकेश गुप्ता (तृतीय सेमेस्टर)

2. श्री राकेश लडोंरा (पंचम सेमेस्टर)

# चतुर्थ श्रेणी कर्मचारी

1. श्री यशपाल सिंह

2. श्री अमरपाल <sup>2</sup>गा भार

3. श्री राजेश कुमार

4. श्री राजबीर सिंह 23वरि

5. श्री राजेन्द्र कुमार

प्रीचीर्यः स्वार्थः



दिनांक : 7/4/2022

कॉलेज के निम्नलिखित शिक्षकों एवं शिक्षणेत्तर कर्मियों को सूचित किया जाता है कि दिनांक 12 अप्रैल 2022 से प्रारम्भ हो रही है। बीएससी प्रथम सेमेस्टर के छात्राों की हे०न०ब०ग० विश्वविद्यालय के अन्तर्गत मुख्य परीक्षा होगी। हे०न०ब०ग० विश्वविद्यालय के अन्तर्गत मुख्य परीक्षाओं को सम्पन्न कराने के लिये सभी सदस्य समयानुसार अपनी ड्यूटी पर उपस्थित हो।

समय : प्रातः 7.15 से 10:00 बजे तक, प्रथम सेमेस्टर डा० आलोक अग्रवाल, केन्द्राध्यक्ष

- 1. डा० मनीषा, सहायक केन्द्राध्यक्ष 📎
- 2. डा० पी० के० शर्मा सहायक केन्द्राध्यक्ष

काउन्टर ड्यूटी तृतीय श्रेणी कर्मचारी

1. श्री विक्रम सिंह नेगी प्रथम सेमेस्टर 🍿

### चतुर्थ श्रेणी कर्मचारी

1. श्री ज्ञानप्रकाश बड़थ्वाल

- श्री जयप्रकाश सिंगले

- श्री अशोक कुमार द्वार कि
   श्री मोहन जोशी
   श्री चन्दर सिंह hm/hm



diamenniyaeta (25)

पत्रांक : .....

दिनांक : 18/01/2023

सेवा में,

श्रीमान् कुलसचिव हे०न०ब०ग० विश्वविद्यालय श्रीनगर (गढ़वाल)

विषय – वर्ष 2022–23 की मुख्य परीक्षा हेतु महाविद्यालय को 7000 "ए" तथा 5000 "सी" उत्तर पुस्तिकाएँ प्रेषित करने के सम्बन्ध में।

महोदय,

निवेदन है कि हे0न0ब0ग0 विश्वविद्यालय की बी0एस0सी0 एवं एम0एस0सी0 (तृतीय एवं पंचम सेमेस्टर) की परीक्षायें 28 जनवरी 2023 से प्रारम्भ हो रही है। वर्ष 2022–23 की मुख्य परीक्षा हेतु महाविद्यालय को 7000 "ए" तथा 5000 "सी" उत्तर पुरितकाएं प्रेषित करने की कृपा करें ताकि परीक्षा संचालन सुचारू रूप से चलाया जा सकें।

धन्यवाद।

डा० आलोक अग्रवाल प्राचीर्य (कार्यवाहक)

चिन्मय डिग्री कॉलेज हरिद्वार

(डा० भी० के० शर्मा)। ह ।।123 प्रभारी, उत्तर पुस्तिका चिन्मय डिग्री कॉलेज, हरिद्वार



दिनांक : 6/12/2021

कॉलेज के निम्नलिखित शिक्षकों / कर्मचारियों को सूचित किया जाता है कि दिनांक 20, 21, 22, 23 दिसम्बर 2021 को बीएससी प्रथम, तृतीय, एवं पंचम सेमेस्टर के छात्रों की हे०न०ब०ग० विश्वविद्यालय के अन्तर्गत इंटरनल परीक्षा होगी। हे०न०ब०ग० विश्वविद्यालय के अन्तर्गत इंटरनल परीक्षाओं को सम्पन्न कराने के लिये सभी सदस्य समयानुसार अपनी ड्यूटी पर उपस्थित हो।

- डा० पी० के० शर्मा 💹
- डा० मनीषा 📢

समय : प्रातः 9.00 र्से 11:00 बजे तक (प्रथम सेमेस्टर) काउन्टर ड्यूटी (तृतीय श्रेणी कर्मचारी)

श्री राकेश गुप्ता चतुर्थ श्रेणी कर्मचारी

श्री यशपाल सिंह

श्री अमरपाल

श्री नईम अहमद



समय : प्रातः 11.00 से 1:00 बजे तक (तृतीय सेमेस्टर) तृतीय श्रेणी कर्मचारी (काउन्टर ड्यूटी)

- श्री राकेश लडोंरा चतूर्थ श्रेणी कर्मचारी
- श्री मोहन चन्द जोशी
- श्री ज्ञानप्रकाश बड्थ्वाल
- श्री राजेश कुमार

समय : दोपहर 1.00 से 3:00 बजे तक (पंचम सेमेस्टर) तृतीय श्रेणी कर्मचारी (काउन्टर ड्यूटी)

श्री विक्रम सिंह नेगी चतुर्थ श्रेणी कर्मचारी

- श्री अशोक कुमार द्विरोध
- श्री जयप्रकाश 2.
- श्री राजबीर सिंह 250ी2

Mamaya Degree Collec-BHEL, flaridwar yntald





सेवा में,

श्रीमान् सहायक कुलसचिव (परीक्षा) हे०न०ब०ग० विश्वविद्यालय श्रीनगर (गढ़वाल)

विषय – हे०न०ब०ग० विश्वविद्यालय की दिनांक 23 एवं 24 अप्रैल 20121 के परीक्षा के सम्बन्ध में।

महोदय,

आपको सूचित किया जा रहा है आपके पत्रांक सं. हे०न०ब०ग०वि०/2001/सीओई/1147, दिनांक 13/8/2021 के अनुसार चिन्मय डिग्री कॉलेज, रानीपुर, हरिद्वार में दिनांक 23 अप्रैल 2021 एवं दिनांक 24 अप्रैल 2021 को विश्वविद्यालय द्वारा निर्धारित परीक्षा कार्यक्रम के अनुसार परीक्षा सम्पन्न करायी जा चुकी है। लेकिन दिनांक 23 अप्रैल 2021 को बीएससी पंचम सेमेस्टर भौतिक विज्ञान का पेपर था जिसमें कोविड के कारण 03 छात्र अनुपरिथत थे एवं दिनांक 24 अप्रैल 2021 को बीएससी तृतीय सेमेस्टर की कम्प्यूटर साइंस का पेपर था जिसमें 04 छात्र अनुपरिथत थे। आपको सूचनार्थ प्रेषित है।

धन्यवाद।

(डा० आलोक अग्रवाल)

कार्यवाहंक प्राचार्य



दिनांक : 23/03/2021

कॉलेज के निम्नलिखित शिक्षकों / कर्मचारियों को सूचित किया जाता है कि दिनांक 30/3/2021 से बी०एस०सी० तृतीय एव पचम वर्ष, एमएससी द्वितीय वर्ष (चतुर्थ सेमेस्टर) के छात्रों की हे०न०ब०ग० विश्वविद्यालय की मुख्य परीक्षा होगी। हे०न०ब०ग० विश्वविद्यालय की मुख्य परीक्षाओं को सम्पन्न कराने के लिये निम्नलिखित प्रकार से ड्यूटी लगाई जा रही है।

#### प्रथम पाली

समय : बी०एस०सी० प्रातः 10.00 से 12.30 बजे तक

केन्द्राध्यक्ष : डा० आलोक अग्रवाल

सहायक केन्द्राध्यक्ष ः डा० पी.के शर्मा डा० मनीषा

तृतीय श्रेणी कर्मचारी (काउन्टर ड्यूटी)

1. श्री राकेश लडोंरा (तृतीय सेमेस्टर)

2. श्री विक्रम सिंह नेगी (पंचम सेमेस्टर)

चतुर्थ श्रेणी कर्मचारी

श्री नईम अहमद

2. श्री राजेश कुमार 🎉

4. श्री सुनील कुमार 🥒

6. श्री राजू

श्री सोमपाल, सफाईकर्मी 🐉

Alty July Survey Dograd Survey Dograd Survey Dograd Survey Survey Dograd Survey Survey



Superior/letter (CS)

सेवा में.

परीक्षा नियन्त्रक महोदय हे०न०ब०ग० विश्वविद्यालय श्रीनगर (गढ़वाल)

विषय – दिनांक 6/4/2021 को होने वाले एम0एस0सी0 माइक्रोबायोलोजी (तृतीय सेमेस्टर) के प्रश्न पत्र (मेडिकल माइक्रोबायोलोजी, कोड – 313171 (C-013)) उपलब्ध कराने हेतु ।

महोदय,

निवेदन है कि चिन्मय डिग्री कॉलेज में एम0एस0सी0 माइक्रोबायोलोजी (तृतीय सेमेस्टर) का दिनांक 6/4/2021 को होने वाला प्रश्नपत्र (मेडिकल माइक्रोबायोलोजी) विश्वविद्यालय द्वारा अभी तक उपलब्ध नहीं करवाया गया है।

अतः आपसे अनुरोध है कि दिनांक 6/4/2021 को एम0एस0सी0 माइक्रोबायोलोजी प्रश्नपत्र (मेडिकल माइक्रोबायोलोजी) को उपलब्ध कराने का कष्ट करें। जिससे एम0एस0सी0 माइक्रोबायोलोजी (तृतीय सेमेस्टर) की परीक्षा समय से सम्पन्न कराई जा सकें।

धन्यवाद।

भवदीय

(डा० वैश्नो दास शर्मा) (डायरेक्टर) एस०एफ०एस० (डा० मनीषा) कार्यवाहक प्राचार्य





दिनांक : 04/02/2021

### सूचना

एम0एस0सी0 प्रथम सेमेस्टर और तृतीय सेमेस्टर की समस्त छात्र / छात्राओं को सूचित किया जाता है कि उनकी सेशनल परीक्षाये दिनांक 15 फरवरी 2021 से प्रारम्भ हो रही है। परीक्षा कार्यक्रम निम्नवत् प्रकार से रहेगा।

एम०एस०सी० (प्रथम संमेरटर)	दिनाक	समय
प्रथम वेपर	15/2/2021	प्रातः ९ ३० से प्रातः ११ ३० बजे तक
द्वितीय पेपर	17/2/2021	प्रातः 9.30 से प्रातः 11.30 बजे तक
तृतीय पेपर	18/2/2021	प्रातः 9.30 से प्रातः 11.30 बजे तक
चतुर्थ पेपर	19/2/2021	प्रातः ९ ३० से प्रातः ११ ३० बजे तक
एम०एस०सी० (तृतीय सेमेस्टर)	दिनाक	समय
प्रथम पेपर	15/2/2021	दोपहर 12.00 से दोपहर 02.00 बजे तक
हितीय पेपर	17/2/2021	दोपहर 12 00 से दोपहर 02.00 बजे तक
तृतीय पेपर	18/2/2021	दोपहर 12.00 से दोपहर 02.00 बजे तक
चतुर्थ पेपर	19/2/2021	दोपहर 12.00 से दोपहर 02.00 बजे तक

(डा० वैष्णव दास शर्मा) डायरक्टर (एसएफएस)

(डा० आलोक अग्रवाल) प्राचार्यः कार्यवाहक