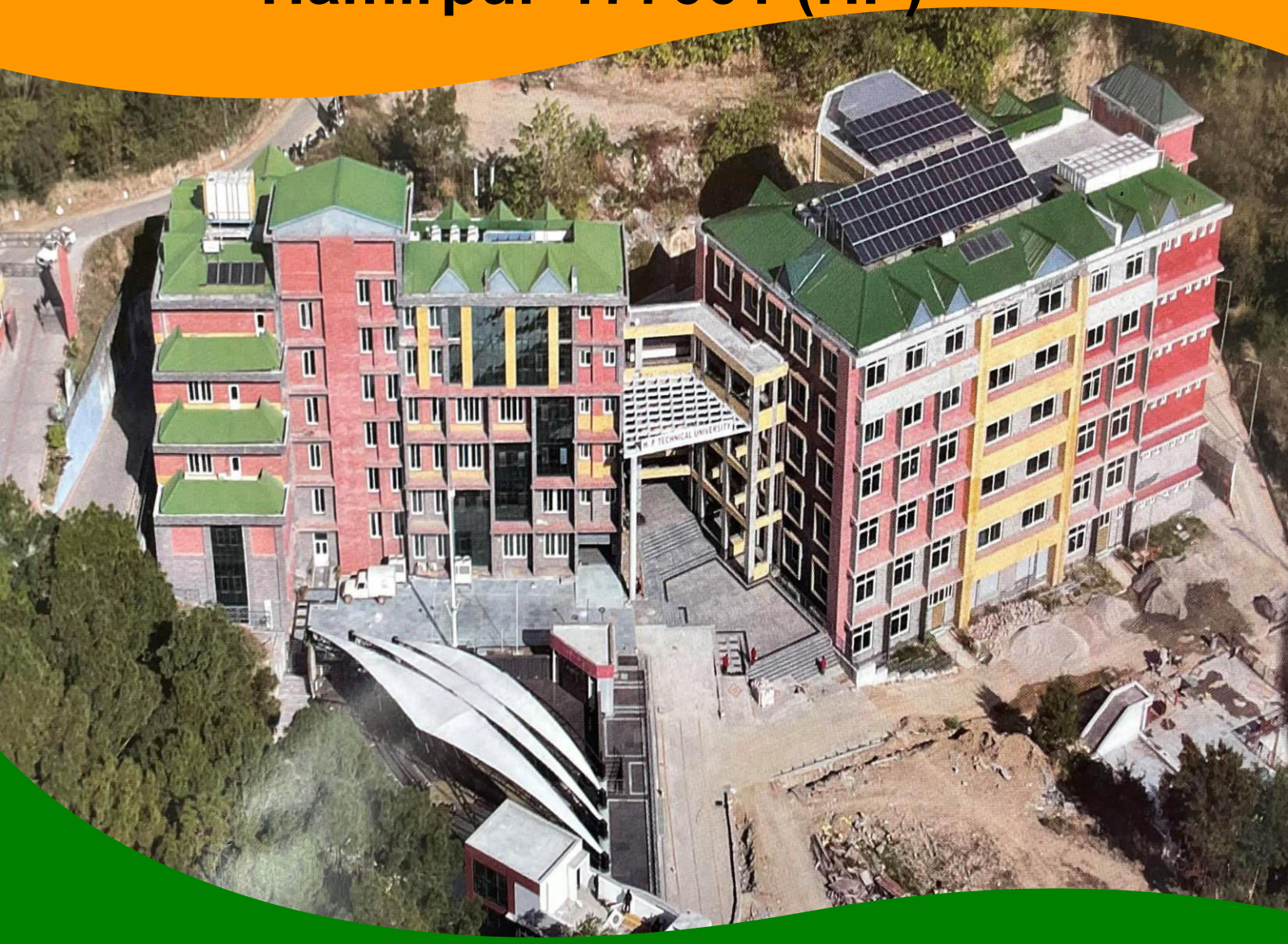
Himachal Pradesh Technical University
Hamirpur-177001 (HP)



Prospectus Part-I

INFORMATION BROCHURE

2026

Himachal Pradesh Common Entrance Test-2026

(HPCET–2026)

ENTRANCE TEST FOR ADMISSION TO
VARIOUS TECHNICAL & PROFESSIONAL COURSES
OF THE UNIVERSITY

THE UNIVERSITY

Preamble

The Himachal Pradesh Technical University (HPTU) was established in the year 2010 by an Act of Legislative Assembly of Himachal Pradesh with an objective for value creation and welfare of the society through technical education, training, research, innovation, entrepreneurship and continuing education programs. At the same time, the University is responsive to changing and exceptional requirements of our society and economy and contributes to find answers to global problems. The University offers both short-term and long-term programs leading to Advance Diploma and Degrees, which are conventional as well as innovative through public and private participation. Most of these programs have been developed after an initial survey of the demand for such Programs. The programs offered are designed to equip graduates and postgraduates with the necessary skills and expertise to be the leaders in their chosen professions. The key to success lies in the high premium it places on innovation, along with the work that is done by different players and stakeholders to promote the University achievements in the fields of Science, Engineering and Technology. This is being achieved through a benchmarking system, which ensures that training and research programs always meet the highest standards. National Education Policy – 2020 is being implemented in all the programs.

Vision

Our vision of autonomous Himachal Pradesh Technical University as dynamic, flexible institution promoting research led inter disciplinary learner-centric technical education which generates added value in teaching-learning, research and knowledge required for promoting integrated national development with global understanding.

Core Values

A primary core value of any university is academic freedom, which is enshrined in the Constitution of the Republic of India. This core value must be buttressed by institutional autonomy, but with in an environment where public accountability i s seen as a virtue. Principles and behaviors defined in the Charter must accord with these and the institutional core values below:

- **Customer Service; Integrity; Diversity and Innovation**

Queries related to **on-line filling of application form** HPCET 2026 may be addressed to:

The Dean-Academic,
Himachal Pradesh Technical University (HPTU),
VPO Daruhi, Distt. Hamirpur (H.P.), PIN-177 001

Email id:**queryadmission@outlook.com**
Tel. No. 01972 226914, 226911

Queries related to **examination centres/admit cards** of HPCET 2026 may be addressed to:

The Controller of Examinations,
Himachal Pradesh Technical University (HPTU),
VPO Daruhi, Distt. Hamirpur (H.P.), PIN-177001

Email id:**coehimtu@gmail.com**
Tel. No. 01972 226908, 226910, 226999

Message of Hon'ble Vice Chancellor

Dear Students and Parents,

It is my privilege to welcome you to Himachal Pradesh Technical University which was established by the Government of Himachal Pradesh in the year 2010. The prime objective of this University is to disseminate advance knowledge, wisdom and understanding in the fields of education, research and training in Engineering, Technology, Pharmacy and Management, and imbibe all those qualities which are essential to make our students contribute effectively to the advancement of the society.

All are aware that the Engineers and Scientists can best be thought of as creators, innovators, problem solvers, builders and leaders in the World. Keeping this fact in mind, Himachal Pradesh Technical University provides quality technical education in different fields to prepare the students enrolled with it to become good contributors to the society in all respects. The degrees offered by this University in various streams are the gateway for the upward growth of the students to pursue their career.

To achieve Sustainable Developments Goals (SDGs) adopted by all United Nations Member States relating to education such as SDG-4 (quality education), SDG-5 (gender equality), SDG-1 (no poverty), and SDG-8 (decent work and economic growth)-In India, recent National Education Policy (NEP) envisions a transformative approach to inclusive education for diverse backgrounds of the students and emphasized to create an environment that enables, honours and promotes diversity. Accordingly, the University has designed a curriculum framework with multiple exit and multiple entry for dual degree programme (BS-MS), (BS-MBA) with honours, blended with STEM subject such as Computer Science/Management Sciences/Data Science/Business Analytics and Sustainability/Development Studies and Public Policy/Sciences/Engineering/Pharmacy. In the curriculum framework of UG and PG programmes, the provisions have been made for the students to undergo one semester industrial/research internship programmes under the ambit of University-industrial-interaction. These industrial/research internships are aimed to improve employability skills and can help in developing competency, capability, professional working skills, expertise and confidence among the students for employability and developing interest for research.

By encouraging inclusive education, the Technical University is committed to ensure that every student receive a quality education and is equipped with the skills required in the 21st Century, irrespective of their background or ability.

I invite all students and their parents who are seeking admission in institutions and main campus of Technical University to take up this opportunity and together we can create an education system that empowers minds, transforms lives and builds an equitable society.

Sd/-
Dr. Abhishek jain (IAS)

Message of Dean - Academic

Dear prospective Students,

It is a matter of immense pleasure for me to be a part of the Himachal Pradesh Technical University (HPTU), Hamirpur family as its Dean (Academic). I take this opportunity of welcoming students coming from all parts of the world, joining the University in undergraduate as well as postgraduate programmes. In their quest for knowledge, most of such students shall be moving away from the folds of their family. One needs to realize that they are just moving away from one family fold to another. Their teachers, seniors and peers, all form an extended family to whom they can look up for any guidance, support and help to move ahead in life as professionals in their study programmes they have opted for.

All the programs offered by HPTU follow the Choice Based Credit System (CBCS) with Outcome Based Approach. The flexibility in the curriculum has been designed with industry-specific goals in mind and the educator enjoys complete freedom to appropriate the syllabus by incorporating the latest knowledge and stimulating the creative minds of the students. Bench marked with the course of studies of various institutions of repute, our curriculum is extremely contemporary and is a result of brainstorming efforts of great think-tanks: faculty members, experts from industries and research level organizations. The evaluation mechanism employs continuous assessment with grade point averages. We sincerely believe that it will meet the aspirations of all stakeholders – students, parents and the prospective employers. Special care is being taken to implement National Education Policy (NEP) – 2020 focusing on its various components including skill development, multiple entry – exit, etc.

You shall learn how to think logically, deal with uncertainty, apply technology in a socially and environmentally responsible manner, communicate effectively and collaborate with others. Always remember that knowledge, know-how (skill), entrepreneurship and hard work coupled with dedication, devotion, determination and discipline are the keys to success. We, at HPTU, lay special emphasis on nourishing and motivating our students to "… become job providers than becoming job seekers …" when they go out to serve the society and the nation.

I extend hearty welcome to all those who are desirous of seeking admission in our campuses and constituent affiliated institutions located throughout the state of Himachal Pradesh. I am confident and wish that it acts as a stepping stone for you towards a successful career in the fascinating world of professional education. I am sure, HPTU will prove to be a 'home away from home' to all of you.

Good Luck!

Sd/-
Dr. Rajesh Kumar

LIST OF ABBREVIATIONS USED IN THIS BOOKLET

HPTU	*Himachal Pradesh Technical University, Hamirpur 177001, HP*
HPCET	*Himachal Pradesh Common Entrance Examination*
MBA	*Master of Business Administration*
MCA	*Master of Computer Applications*
MBA (T&HM)	*Master of Business Administration in Tourism & Hospitality Management*
M.Sc. Physics	*Master of Science in Physics*
M.Sc. Environmental Sciences	*Master of Science in Environmental Sciences*
B. Tech	*Bachelor of Technology*
B. Pharmacy	*Bachelor of Pharmacy*
BHMCT	*Bachelor of Hotel Management & Catering Technology*
B.Sc. (HM & CT)	*Bachelor of Science in Hotel Management & Catering Technology*
AICTE	*All India Council of Technical Education*
PCI	*Pharmacy Council of India*
UGC	*University Grants Commission*
UG	*Undergraduate*
PG	*Postgraduate*
OMR	*Optical Mark Recognition*
GEN	*General*
SC	*Scheduled Caste*
ST	*Scheduled Tribe*
OBC	*Other Backward Classes*
BPL	*Below Poverty Line*
EWS	*Economically Weaker Section*

Himachal Pradesh Technical University (HPTU)

Himachal Pradesh Common Entrance Test–2026 [HPCET–2026]

INDEX

*IMPORTANT DATES AT A GLANCE: *For Entrance Test*

EVENT	DATE
Start date of filling-in online Application Form for HPCET-2026 for B. Tech (Direct Entry), B. Pharmacy (Direct Entry), MCA, MBA, MBA (T&HM), B.Sc. (HM & CT)/BHMCT, M.Sc. Physics and M.Sc. Environment Sciences courses	**13.03.2026**
Closing date of filling-in online form of above courses	**19.04.2026**
Date and time of Entrance Examination for B. Tech. (Direct Entry), B. Pharmacy (Direct Entry) courses	**10.05.2026** (09.00AM to12:15PM)
Date and time of Entrance Examination for M.Sc. Physics course	**10.05.2026** (09:00 AM to 11:00AM)
Date and time of Entrance Examination for MBA, MBA (T&HM), MCA courses	**10.05.2026** (02:00PM to 04:00PM)
Date and time of Entrance Examination for B.Sc. (HM & CT)/BHMCT, M.Sc. Environment Sciences course	**09.05.2026** (09:00 AM to 11:00 AM)
Tentative Date of Declaration of HPCET-2026 Result	By **21.05.2026**

*Kindly keep visiting University's website i.e., **www.himtu.ac.in** for the latest updates

#IMPORTANT INFORMATION: *After Entrance Test*

- After declaration of HPCET-2026 result, the candidates shall be required to apply separately on the prescribed application form for counselling. The form will be made available on HPTU's website i.e. **www.himtu.ac.in.**
- The Prospectus Part-II, Admission Brochure 2026-27, containing instructions for filling online application-cum-counseling form and other related information, will be made available on the website of the University in the month of May, 2026.
- The applicants are required to attend centralized counseling to get admission in various UG & PG courses of the University as notified in due course. The tentative schedule of events is as follows:

EVENT	DATE (TENTATIVE)
Publication of the **Prospectus Part-II: Admission Brochure 2026-27** on University's official website	May,2026
Online Application Form for centralized counseling available on University's official website	May, 2026
Centralized counseling for admission to UG & PG courses for The academic session 2026-27	June, 2026
Start of the classes of various UG & PG courses for the academic Session 2026-27	Last week of July/1st week of August, 2026

#Kindly keep visiting University's website i.e., **www.himtu.ac.in** for the latest updates

Note-:The conduct of course tests shall be subject to the number of candidates applying for the respective course. The University reserves the right to cancel or modify the test if necessary.

Chapter 1: Introduction

1.1 About Himachal Pradesh Technical University

a. The Government of Himachal Pradesh has established the Himachal Pradesh Technical University with the mandate to create excellent competent environment to impart the technical education across the State. The University has been established with the following objectives: -

b. To develop the knowledge of science, engineering and technology, management and environment by teaching, research, experimentation or practical training for the advancement of quality of life of the mankind.

c. To supply the required skilled manpower of appropriate kind and quality to meet the needs of society and national development plans.

d. To develop patterns of teaching and training at various levels of educational accomplishment so as to set high standards of education in science, engineering and technology.

e. To drive benefits from the ever growing scientific and technological knowledge in different parts of the world and to advance frontiers of knowledge by research, innovation, invention and product development.

f. To establish close linkage with Industry to make teaching, training and research in the University relevant to the needs of society and industry at national and international level.

g. To establish, maintain and manage colleges, University schools & departments, centres of research and other institutions necessary to carry out the objects of the University.

h. To affiliate or recognize colleges or institutions within and outside the State of Himachal Pradesh.

i. To function as a leading resource Centre for knowledge management and entrepreneurship development in the area of Science and Technology.

1.2 Admission to Technical and Professional Courses: About HPCET

a. Himachal Pradesh Technical University Hamirpur was established by Government of Himachal Pradesh under the State Legislative Act-16 of 2010.

b. Under the provision of Section-5 of the Himachal Pradesh Private Technical and Vocational Educational Institutions (Regulation of Admission and Fixation of Fee) Act, 2008, the State Government notified the eligibility criteria for admission in technical and professional courses from academic session 2018-19 in respect of the institutions as specified under Section -2 of the Act 2008.

c. Accordingly, the Himachal Pradesh Technical University (hereafter called as HPTU) will conduct Himachal Pradesh Common Entrance Test (hereafter called HPCET-2026) for admissions to B. Tech., B. Pharmacy, MCA, MBA, MBA (T&HM), B.Sc. (HM & CT)/BHMCT, M.Sc. Physics and M.Sc. Environment Sciences offered by HPTU and its affiliated colleges, deemed to be University or other Universities established under the State Act or constituent units thereto.

d. Admission to all the courses shall be made on the basis of merit or rank/marks obtained in the National Level Entrance Test/HPCET-2026, subject to fulfillment of minimum educational qualification given under section 2.9.

Chapter 2: Entrance Test Scheme

2.1 Mode of conduct of HPCET-2026: It will be conducted Offline

2.2 Language of the question papers : English

2.3 Syllabus for Entrance Test: Course-wise syllabus is given in Appendix (A to E) as indicated:

Sr. No.	Name of Course	Appendix
1	B. Tech	**A**
2	B. Pharmacy (Allopathy)	
3	B.Sc. (HM & CT)/BHMCT	**B**
4	MCA, MBA and MBA(T&HM)	**C**
5	M.Sc. Physics	**D**
6	M.Sc. Environmental Sciences	**E**

2.4 Pattern for HPCET-2026 for UG Courses: B. Tech. and B. Pharmacy (Allopathy)

SN	Subject	Section	Number of Questions	Total Questions to be attempted	Marks (per question X total questions)	Total Marks	Type of Questions	Duration
1	Physics	Section A	20	All 20	4x20	80	MCQs (Multiple Choice Questions)	**3 Hours & 15 Minutes**
		Section B	40	30	4x30	120		
2	Chemistry	Section A	20	All 20	4x20	80		
		Section B	40	30	4x30	120		
3	Mathematics or Biology	Section A	20	All 20	4x20	80		
		Section B	40	30	4x30	120		
Total		-	-	**150**	4x150	**600**	-	

Note: Correct option marked will be awarded four (4) marks and Incorrect option marked will be awarded minus one (-1) mark. Unattempted/Unanswered Questions will be awarded no mark (0).

Important Points to Note:

(a) The duration of examination will be 3 hrs. &15 minutes.

(b) **For Section A (MCQs):** All the given 20 questions are compulsory.
For Section B (MCQs): Candidates need to attempt any 30 Questions out of given 40 Questions. In the event of a candidate have attempted more than 30 questions, only the first 30 attempted questions will be considered for evaluation.

(c) To answer a question, the candidates need to choose one option corresponding to the correct answer or the most appropriate answer.

(d) **There will be negative marking for both the Sections.**

However, if any anomaly or discrepancy is found after the process of challenges of the key verification, it shall be addressed in the following manner:

(i) Correct answer or the most appropriate answer: Four marks (+4).
(ii) Any incorrect option marked will be given Minus one mark (-1).
(iii) Unanswered/unmarked question will be given no mark (0).
(iv) If more than one option is found to be correct, then four marks (+4) will be awarded to only those who have marked any of the correct options.
(v) If all options are found to be correct, then Four marks (+4) will be awarded to all those who have attempted the question.
(vi) If none of the options is found correct or a Question is found to be wrong or a Question is dropped, then all candidates who have appeared will be given four marks (+4) irrespective of the fact whether the question has been attempted or not by the candidate.
(vii) Candidates are advised to do the calculations with the constants given (if any) in the questions.

2.5 Pattern for HPCET-2026 for B.Sc. (HM & CT)/BHMCT

S N	Subject	Section	Number of Questions	Total Questions to be attempted	Marks (per question x total questions)	Total Marks	Type of Questions	Duration
1	General English	A	25	25	1 x25	25	MCQs (Multiple Choice Questions)	Two Hours
2	General Knowledge	B	25	25	1 x25	25		
3	Reasoning	C	25	25	1 x25	25		
4	Data Interpretation & Graphs	D	25	25	1 x25	25		
Total		-	-	100	4x25	100	-	
Note: Correct option marked will be given one (1) mark and Incorrect option marked will be given minus one fourth (-1/4) mark i.e. -0.25. Unattempt/Unanswered Questions will be given no marks (0).								

Important Points to Note:

- The duration of examination will be 2 hours.
- All the questions are compulsory.
- To answer a question, the candidates need to choose one option corresponding to the correct answer or the most appropriate answer.
- **There will be negative marking for all the Sections.**
- However, if any anomaly or discrepancy is found after the process of challenges of the key verification, it shall be addressed in the following manner:
- Correct answer or the most appropriate answer: one mark (+1).
- Any incorrect option marked will be given minus one fourth mark (-1/4) i.e. -0.25.

- Unanswered/Marked for Review will be given no mark (0).
- If more than one option is found to be correct, then one marks (+1) will be awarded to only those who have marked any of the correct options.
- If all options are found to be correct, then one mark (+1) will be awarded to all those who have attempted the questions.
- If none of the options is found correct or a Question is found to be wrong or a Question is dropped, then all candidates who have appeared will be given one mark (+1) irrespective of the fact whether the question has been attempted or not by the candidate.
- Candidates are advised to do the calculations with the constants given (if any) in the questions.

2.6 Pattern for HPCET-2026 for MCA, MBA and (MBA [T & HM])

S N	Subject	Section	Number of Questions	Total Questions to be attempted	Marks (per question x total questions)	Total Marks	Type of Questions	Duration
1	Verbal Ability & Reading Comprehension (VARC)	A	25	25	4 x25	100	MCQs (Multiple Choice Questions)	Two Hours
2	Data Interpretation & Logical Reasoning (DILR)	B	25	25	4 x25	100		
3	Quantitative Aptitude (QA)	C	25	25	4 x25	100		
Total		-	-	75	4 x75	300	-	
Note: Correct option marked will be awarded four (4) marks and incorrect option marked will be awarded minus one (-1) mark. Un-attempted / Un-answered Question will be awarded no marks (0).								

Important Points to Note:

- The duration of examination will be 2 hours.
- **There will be negative marking in all the Sections.**
  However, if any anomaly or discrepancy is found after the process of challenges of the key verification, it shall be addressed in the following manner:
- Correct answer 0r the most appropriate answer will be awarded Four marks (+4).
- Any incorrect option marked will be given Minus One mark (-1).
- Unanswered/unmarked question will be given No mark (0).
- If more than one option is found to be correct, then four marks (+4) will be awarded to only those who have marked any of the correct options.
- If all options are found to be correct, then Four marks (+4) will be awarded to all those who have attempted the question.
- If none of the options is found correct or a Question is found to be wrong or a Question is dropped, then all candidates, who have appeared, will be awarded four marks (+4) irrespective of the fact whether the question has been attempted or not by the candidate.
- Candidates are advised to do the calculations (if any) with the constants given (if any) in the questions.

2.7 Pattern for HPCET-2026 for M.Sc. Physics

S N	Subject	Section	Number of Questions	Total Questions to be attempted	Marks (per question x total questions)	Total Marks	Type of Questions	Duration
1	Mathematics methods, Classical mechanics and general properties of matter	A	25	25	1 x25	25	MCQs (Multiple Choice Questions)	Two Hours
2	Optics, Electricity and magnetism	B	25	25	1 x25	25		
3	Modern Physics, Nuclear and Particle Physics	C	25	25	1 x25	25		
4	Atomic and Molecular Physics, Kinetic Theory of gases and Thermodynamics, Solid State Physics and Electronics	D	25	25	1 x25	25		
Total		-	-	100	4x25	100	-	
Note: Correct option marked will be given one (1) mark and Incorrect option marked will be given minus one fourth (-1/4) mark I.e. -0.25. Unattempt/Unanswered Questions will be given no marks (0).								

Important Points to Note:

- The duration of examination will be 2 hours.
- All the questions are compulsory
- To answer a question, the candidates need to choose one option corresponding to the correct answer or the most appropriate answer.
- **There will be negative marking for all the Sections.**
- However, if any anomaly or discrepancy is found after the process of challenges of the key verification, it shall be addressed in the following manner:
- Correct answer or the most appropriate answer: one mark (+1).
- Any incorrect option marked will be given minus one fourth mark (-1/4) i.e. -0.25.
- Unanswered/Marked for Review will be given no mark (0).
- If more than one option is found to be correct, then one marks (+1) will be awarded to only those who have marked any of the correct options.
- If all options are found to be correct, then one mark (+1) will be awarded to all those who have attempted the questions.
- If none of the options is found correct or a Question is found to be wrong or a Question is dropped, then all candidates who have appeared will be given one mark (+1) irrespective of the fact whether the question has been attempted or not by the candidate.
- Candidates are advised to do the calculations with the constants given (if any) in the questions.

2.8 Pattern for HPCET-2026 for M.Sc. Environmental Sciences

S N	Subject	Section	Number of Questions	Total Questions to be attempted	Marks (per question x total questions)	Total Marks	Type of Questions	Duration
1	Earth Sciences	A	25	25	1x25	25	MCQs (Multiple Choice Questions)	Two Hours
2	Physical and Chemical Sciences	B	25	25	1x25	25		
3	Life Sciences	C	50	50	1x50	50		
	Total			100	100	100		
Note: Correct option marked will be given one (1) mark and Incorrect option marked will be given minus one fourth (-1/4) mark i.e. -0.25. Unattempt/Unanswered Questions will be given no marks (0).								

Important Points to Note:

- The duration of examination will be 2 hours.
- All the questions are compulsory
- To answer a question, the candidates need to choose one option corresponding to the correct answer or the most appropriate answer.
- **There will be negative marking for all the Sections.**
- However, if any anomaly or discrepancy is found after the process of challenges of the key verification, it shall be addressed in the following manner:
- Correct answer or the most appropriate answer: one mark (+1).
- Any incorrect option marked will be given minus one fourth mark (-1/4) i.e. -0.25.
- Unanswered/Marked for Review will be given no mark (0).
- If more than one option is found to be correct, then one marks (+1) will be awarded to only those who have marked any of the correct options.
- If all options are found to be correct, then one mark (+1) will be awarded to all those who have attempted the questions.
- If none of the options is found correct or a Question is found to be wrong or a Question is dropped, then all candidates who have appeared will be given one mark (+1) irrespective of the fact whether the question has been attempted or not by the candidate.
- Candidates are advised to do the calculations with the constants given (if any) in the questions.

2.9 Eligibility Criteria

The candidates appearing in HPCET-2026 for seeking admission to a particular course must fulfill the eligibility criteria for the corresponding course as per norms of All India Council of Technical Education (AICTE) / PCI / UGC or as applicable. The minimum eligibility criteria for the different courses is given in Table 2.9.1 -

Table 2.9.1: Minimum eligibility criteria for appearing in HPCET-2026

Course	Minimum eligibility for appearing in HPCET-2026
B. Tech (Direct Entry)	Passed 10+2 examination with Physics / Mathematics / Chemistry / Computer Science / Electronics / Information Technology / Biology / Informatics Practices / Biotechnology / Technical Vocational subject / Agriculture / Engineering Graphics / Business Studies / Entrepreneurship (as per **Appendix-F**) Agriculture stream(for Agriculture Engineering) Obtained at least 45% marks (40% marks in case of candidates belonging to reserved category) in the above subjects taken together. **OR** Passed D. Voc. Stream in the same or allied sector.
B. Pharmacy Allopathy (Direct Entry)	Passed / appeared 10+2 examination from a recognized Board or University with Physics and Chemistry as compulsory subjects along with one of the Mathematics / Biology subject securing at least 45% marks (40% reserved category) in the these subjects taken together. Provided that a student should complete the age of 17 years on or before 31st December of the year of admission to the course.
B.Sc. (HM & CT) /BHMCT	All those candidates who have passed 10+2 examination in any stream from a Board recognized or established by Central/State Government through legislation shall be eligible to apply. Further the candidate should have obtained at least 45% marks (40% in case of candidate belonging to reserve category) in the qualifying examination
MBA and MBA (T&HM)	Passed bachelor's degree of minimum 3years duration. Obtained at least 50% marks (45% marks in case of candidates belonging to reserved category) in the qualifying examination.
MCA	Passed any graduation degree (e.g.: B.E. / B. Tech. / B. Sc / B.Com. / B.A./ B. Voc./ BCA etc.,) preferably with Mathematics at 10+2 level or at Graduation level. Obtained at least 50% marks (45% marks in case of candidates belonging to reserved category) in the qualifying examination. (For students having no Mathematics background, compulsory bridge course will be framed by the respective University/ Institution and additional bridge courses related to computer subjects as per the norms of the concerned University).
M.Sc. Physics	All those candidates who have passed bachelor degree in science, B.Sc. with Physics, Chemistry and Mathematics with a minimum 50% marks (45% in case of reserved categories) in aggregate in the three years of degree or Honors in the concerned subject. i.e. Physics.

M.Sc. Environmental Sciences	Candidates who have passed any Bachelor/UG Degrees in any branch/stream of basic/applied sciences examinations including Engineering/Medical Sciences, Pharmacy, Architecture from the recognized institution/University with a minimum of 50% Marks (45% in case of reserved categories)

Note:-

(i) The candidates who are appearing for their final examination of 10+2 or bachelor degree examination in March/April, 2026 shall be eligible to appear in HPCET-2026 but the final selection is subject to fulfilling the prescribed eligibility criteria.

(ii) In case the percentage of marks in the qualifying examination is in fractions, the same shall be rounded off to the nearest figure.

2.10 Admission Process

Admission to the aforementioned courses shall be made on the basis of merit (rank/marks) of HPCET-2026 and applicable National Level Entrance Tests subject to fulfillment of minimum educational qualification criteria as mentioned in Table 2.9.1. **The Admission criteria and procedure, including rules and regulations, shall be available in the Prospectus–II (Admission Brochure 2026-27)** which will be available on HPTU website: **www.himtu.ac.in** after declaration of HPCET-2026 result.

2.11 Seats Available

The seats available, in different affiliated Institutions in UG and PG courses for the academic year 2026-27, shall be specified separately in the **Prospectus–II (Admission Brochure 2026-27)**. However, the tentative seats available in colleges affiliated to Himachal Pradesh Technical University and University campus / Off-Campuses in UG & PG Programmes [**as per Previous Year 2025-26**] are given hereafter:

a. B. Pharmacy Institutions:

SN	Name of the Institutions	Sanctioned Intake
1	Govt. College of Pharmacy, Rohru, Distt. Shimla (HP) 171207	60
2	Govt. Pharmacy College Kangra at Nagrota Bagwan, Distt. Kangra (HP)	60
3	Govt. Pharmacy College Seraj, Bagsaid, Tehsil-Thunag, Distt. Mandi (HP)	60
4	HPTU off Campus Govt. Pharmacy College Rakkar,V.P.O-Kuhna, Tehsil Rakkar, Distt. Kangra (HP) 177043	60
5	Govt. Pharmacy College Sullah, Camp at Govt. Degree College Naura, Distt. Kangra, (HP)	40
6	Abhilashi College of Pharmacy, Nerchowk, Distt. Mandi (H.P.)	100
7	DDM College of Pharmacy, Gondpur, Distt. Una (H.P.)	60
8	Dreamz College of Pharmacy, Vill. Khilra, P.O. Meramaist, Teh. Sundernagar, Distt. Mandi (H.P.)	60
9	Himachal Institute of Pharmaceutical Education & Research, Nadaun, Distt. Hamirpur (H.P.)	60
10	Himachal Institute of Pharmacy, Rampur Ghat Road, Paonta Sahib, Distt. Sirmour (H.P.)	100
11	Himachal Pharmacy College ,Nalagarh, Distt. Solan (H.P.)	60
12	Himalayan Institute of Pharmacy, Kala Amb, Distt. Sirmour (H.P.)	100
13	K.C. Institute of Pharmaceutical Sciences, Pandoga, Distt. Una (H.P.)	100
14	Laureate Institute of Pharmacy, Kathog, Distt. Kangra (H.P.)	100
15	L.R. Institute of Pharmacy, Solan (H.P.)	100

16	Shiva Institute of Pharmacy, Chandpur, Distt. Bilaspur (H.P.)	100
17	Vinayaka College of Pharmacy, Bohoguna, Distt. Kullu (H.P.)	100
18	Gautam College of Pharmacy, Hamirpur (H.P.)	100
19	Minerva College of Pharmacy, Indora, Distt. Kangra (H.P.)	100
20	Aakash Institute of Medical Sciences, Nalagarh, Distt. Solan (H.P.)	100
21	Shanti Niketan College of Pharmacy, Balh, Distt. Mandi (H.P.)	60
22	SIRDA Polytechnic, Sundernagar, Distt. Mandi (H.P)	60
23	Shaheed Bhagat Singh College of Pharmacy, Palampur, Distt. Kangra (H.P)	60
24	Vinayaka Institute of Pharmacy , Vill. Saithal P.O., Rajwari, Tehsil Balh, Distt. Mandi (H.P.)	60

b. B. Pharmacy (Practice) Institution

SN	Name of the Institutions	Sanctioned Intake
1	Laureate Institute of Pharmacy, Kathog, Distt. Kangra (H.P.)	40

c. Pharm. D Institution

SN	Name of the Institutions	Sanctioned Intake
1	Laureate Institute of Pharmacy, Kathog, Distt. Kangra (H.P.)	30

d. B. Tech/B. Architecture Institutions

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	School of Engineering & Technology, Himachal Pradesh Technical University, Hamirpur (H.P.)	Computer Science Engineering	60
2	Atal Bihari Vajpayee Government Institute of Engineering & Technology, Pragati Nagar, Distt. Shimla (H.P.)	Computer Science Engg.	48
		Electronics & Communication Engg.	48
		Electrical Engg.	48
		Civil Engg.	48
3	Jawaharlal Nehru Government Engineering College, Sundernagar, (NBA Accerdited) Distt. Mandi (HP)	Civil Engg.	60
		Computer Science Engg. (Artificial Intelligence & Machine Learning)	60
		Electronics & Communication Engg.	60
		Mechanical Engg.	60
		Textile Engg.	60

4	Rajiv Gandhi Government Engineering College, Nagrota Bagwan, Distt. Kangra (HP)	Civil Engg.	60
		Electrical Engg.	60
		Electronics & Communication Engg.	60
		Mechanical Engg.	60
		Computer Science Engg. (AI & DS)	60
		B. Architecture	30
5	Mahatma Gandhi Government Engineering College Kotla (Jeori), Tehsil Rampur, Distt. Shimla (H.P.)	Civil Engg.	60
		Mechanical Engg.	60
6	Government Hydro Engineering College, Bandla, Distt. Bilaspur (H.P.)	Civil Engg.	51+9*
		Electrical Engg.	51+9*
		Computer Science Engg. (AI & DS)	51+9*
7	School of Computer Science Engg. & Technology, Govt. College Dharamshala, District Kangra (HP)	Computer Science Engg.	60
8	Green Hills Engineering College, Solan (H.P.)	Civil Engg.	60
		Electrical Engg.	60
		Computer Science Engg.	60
		Mechanical Engg.	60
9	Himachal Institute of Engineering & Technology, Shahpur, Distt. Kangra (H.P.)	Civil Engg.	60
		Electrical & Electronics Engg.	60
		Computer Science Engg.	30
		Mechanical Engg.	30
10	Himalayan Institute of Engineering & Technology Kala Amb, Distt. Sirmour, (HP)	Civil Engg.	30
		Electrical Engg.	30
		Computer Science Engg.	120
		Mechanical Engg.	30
		Computer Science Engg. (AI & ML)	60
11	K.C Group of Research & Professional Institutes, Pandoga Distt. Una (H.P.)	Civil Engg.	60
		Electrical Engg.	30
		Computer Science Engg.	60
		Mechanical Engg.	60
12	T.R. Abhilashi Memorial Institute of Engineering & Technology, Tanda, Distt. Mandi (H.P.)	Civil Engg.	60
		Electrical Engg.	30
		Computer Science Engg.	30
13	Vaishno College of Engineering, Thapkour, Distt. Kangra, (H.P.)	Civil Engg.	30
		Electrical Engg.	30
		Computer Science Engg.	60
		Mechanical Engg.	30
14	L.R. Engineering & Technology, Solan (HP)	Civil Engg.	30
		Electrical Engg.	30
		Computer Science Engg.	30
		Computer Science Engg. (AI & ML)	30

*Nine (9) seats i.e.,15% of the sanctioned intake in each discipline shall be filled up through nomination from industry partners (NTPC and NHPC 7.5% each) as per the applicable admission norms.

e. Working Professional Institution

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	Vaishno College of Engineering, Thapkour, Distt. Kangra, (H.P.)	Civil Engg.	30
		Electrical Engg.	30
		Computer Science Engg.	30

f. M. Tech. Institutions

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	School of Engineering & Technology, Himachal Pradesh Technical University, Hamirpur (H.P.)	M. Tech. in Computer Science Engineering	24
2	Jawaharlal Nehru Government Engineering College, Sundernagar, (NBA Accerdited) Distt. Mandi (HP)	M. Tech. in Civil Engineering (Construction Engineering & Management)	12
3	Government Hydro Engineering College, Bandla, Distt. Bilaspur (H.P.)	M. Tech. in Electrical Vehicle Technology	12

g. MBA Institutions

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	School of Commerce & Management, Himachal Pradesh Technical University, Hamirpur (H.P.)	MBA	60
2	HPTU Off Campus Business School at Rajiv Gandhi Government Engineering College Nagrota Bagwan, Distt. Kangra (H.P.)	MBA	40+5**
3	Government PG College, Dharamshala, Distt. Kangra (H.P.)	MBA	60
4	Govt. College, Una, Distt. Una (H.P.)	MBA	60
5	Himalayan Institute of Management, Kala Amb, Distt. Sirmour (H.P.)	MBA	90
6	K.C. Group of Research & Professional Institutes, Pandoga, Distt. Una (H.P.)	MBA	60
7	L.R Institute of Management, Solan (H.P.)	MBA	60
8	Gautam Institute of Management & Technology, Hamirpur, (HP)	MBA	120

**Five (5) Seats are under Sponsored Category for in-service persons. The candidates need not to pass the admission

criteria and shall be admitted purely on the basis of merit of the qualifying examination provided they are duly sponsored by the employer. The candidates may send their applications along-with supporting documents through proper channel to **The Registrar, H.P. Technical University, Hamirpur 177701, HP** by 15th July, 2026.

h. MBA (Tourism & Hospitality Management)

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	School of Tourism and Hospitality Management, Himachal Pradesh Technical University, Hamirpur (H.P.)	MBA (T&HM)	30

i. MCA Institutions

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	School of Engineering & Technology, Himachal Pradesh Technical University, Hamirpur (H.P.)	MCA	60
2	Government PG College, Dharamshala, Distt. Kangra (H.P.)	MCA	60
3	Govt. College, Una, Distt. Una (H.P.)	MCA	60

j. M.Sc. Physics, M.Sc. Environmental Sciences and M.A./M.Sc. in Yoga

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	School of Basic and Applied Sciences, Himachal Pradesh Technical University, Hamirpur (H.P.)	M.Sc. Physics	30
2	School of Environmental Sciences, Himachal Pradesh Technical University, Hamirpur (H.P.)	M.Sc. Environmental Sciences	30
3	Department of Yoga Studies, University Schools of Studies, Himachal Pradesh Technical University Hamirpur (H.P.)	MA/M.Sc.in Yoga	30

k. M. Pharmacy Institutions

SN	Name of the Institutions	Name of Specialization	Sanctioned Intake
1	Laureate Institute of Pharmacy, Kathog, Distt. Kangra (H.P.)	M. Pharmacy in Pharmaceutics	15
		M. Pharmacy in Pharmaceutical Analysis	15
		M .Pharmacy in Pharmacology	15
2	L.R. Institute of Pharmacy, Solan (H.P.)	M. Pharmacy in Pharmaceutics	12
		M. Pharmacy in Pharmacology	09
3	Himachal Institute of Pharmacy, Rampur Ghat Road, Paonta Sahib, Distt. Sirmour (H.P.)	M. Pharmacy in Pharmaceutics	15
		M. Pharmacy in Pharmacology	15

		M. Pharmacy in Industrial Pharmacy	15
4	Himalayan Institute of Pharmacy, Kala Amb, Distt. Sirmour (H.P.)	M. Pharmacy in Pharmaceutics	15
5	Shiva Institute of Pharmacy, Chandpur, Distt. Bilaspur (H.P.)	M. Pharmacy in Pharmaceutics	15
		M. Pharmacy in Pharmaceutical Chemistry	15
		M. Pharmacy in Pharmacology	15
6	Himachal Institute of Pharmaceutical Education & Research, Nadaun, Distt. Hamirpur (H.P.)	M. Pharmacy in Pharmaceutics	15
7	Gautam College of Pharmacy, Hamirpur (HP)	M. Pharmacy in Pharmaceutical Chemistry	15
		M. Pharmacy in Pharmaceutics	15
8	Dreamz College of Pharmacy, Vill. Khilra, P.O. Meramaist, Teh. Sundernagar, Distt. Mandi (H.P.)	M. Pharmacy in Pharmaceutics	15
9	DDM College of Pharmacy, Gondpur, Distt. Una (H.P.)	M. Pharmacy in Pharmaceutics	15
10	Minerva College of Pharmacy, Indora, Distt. Kangra (H.P.)	M. Pharmacy in Pharmaceutics	15
11	Vinayaka Institute of Pharmacy , Vill. Saithal P.O., Rajwari, Tehsil Balh, Distt. Mandi (H.P.)	M. Pharmacy in Pharmaceutics	15

l. B.Sc. (HM & CT) and BHMCT

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	School of Tourism and Hospitality Management, Himachal Pradesh Technical University, Hamirpur (H.P.)	BHMCT	30
2	HPTU Off Campus Business School at Rajiv Gandhi Government Engineering College Nagrota Bagwan, Distt. Kangra (H.P.)	B.Sc. (HM & CT)	60
3	K.C. Institution of Hotel Management & Catering Technology, Pandoga, District Una, (H.P.)	B.Sc. (HM & CT)	60
4	LR. Institute of Hotel Management & Catering Technology, Solan (H.P.)	B.Sc. (HM & CT)	60

m. BBA & BCA Institutions

SN	Name of the Institutions	Name of Course	Sanctioned Intake
1	Himachal Institute of Management Studies, Shahpur, Kangra, Himachal Pradesh	BBA	40
2	Himachal Institute of Management Studies, Shahpur, Kangra, Himachal Pradesh	BCA	40

Note:

(i) The status of seats shown against the respective institutions is tentative, based on the previous year's intake and seats may increase or decrease at the time of counseling/admissions for 2026-27.

(ii) Existing/New institutions offering the courses at UG and PG level offered by the H.P. Technical University may be added or deleted.

Chapter 3: Entrance Test Details and Instructions

3.1 Application Form

(a) All candidates have to apply online on the prescribed application form available on the University website *i.e.*, **www.himtu.ac.in** as per guidelines given in **Chapter 4**.

(b) The candidates must fill the application form in all respect carefully and check the same before submitting it.

(c) Incomplete application form shall not be considered and no correspondence shall be made in this regard.

(d) The application form once submitted can neither be taken back under any circumstances nor shall the application fee deposited be refunded in any case.

(e) Any application submitted after the prescribed last date will not be accepted.

(f) The applicants are required to pay the non-refundable entrance examination fee as mentioned under the following Section 3.2.

3.2 Entrance Test Fee

Non-refundable entrance examination fee for different categories is as under:

SN	Course	Fee(Rs.)		Remarks
		SC/ST/BPL	Others	
1	B. Tech.	800	1600	**Fee once paid shall not be refunded in any case**
2	B. Pharmacy (Allopath)	800	1600	
3	B. Tech. & B. Pharmacy **both**	1600	3200	
4	B.Sc.(HM & CT) / BHMCT	800	1600	
5	MCA	800	1600	
6	MBA	800	1600	
7	MBA(T&HM)	800	1600	
8	MBA & MBA(T&HM):**both**	1600	3200	
9	MCA & MBA(T&HM):**both**	1600	3200	
10	MBA & MCA: **both**	1600	3200	
11	MBA, MBA(T&HM) & MCA:**all**	2400	4800	
12	M.Sc. Physics	800	1600	
13	M.Sc. Environmental Sciences	800	1600	

- **Change of Examination Centre:**
  Change of Examination Centre for HPCET-2026 shall be permitted only on genuine grounds, subject to approval by the competent authority. A fee of Rs. 2,000/- shall be charged for each such request.

3.3 Admit Card

(a) The e-admit card duly signed by the Controller of Examinations (CoE) will be made available to candidates on the University website, *i.e.*, **www.himtu.ac.in**. The candidates should download e-admit card by entering the application form number/ date of birth.

(b) The e-admit card will contain the e-admit card number, photograph of the student, address of

the examination centre and examination date. Discrepancies, if any, must be brought to the notice of the Controller of Examinations, Himachal Pradesh Technical University, VPO Daruhi, Distt. Hamirpur (H.P.)-177001 immediately.

(c) Candidates should take a print of the e-admit card using the print option on A-4 size paper only. Please ensure that all information on the e-admit card including photograph is clearly visible on the print and e-admit card is duly signed by CoE.

(d) Candidates will not be permitted to appear for the written test without valid e-admit card.

(e) Candidates must not mutilate e-admit card or change any entry made there in after it has been authenticated and received by them. Impersonation is a legally punishable offence.

(f) The e-admit card is an important document and it must be preserved and produced at the time of entrance examination / test. **Candidate should report to the allotted examination centre along with e-admit card and ID proof like AADHAR card etc. at least half an hour before the commencement of examination**.

3.4 Schedule of Entrance Test

Sr. No.	Course	Date of Common Entrance Test (HPCET-2026)	Tentative Date(s) of Declaration of Result
1.	B. Tech. (Direct Entry)	**10.05.2026** (09.00AM to12:15PM)	By 21.05.2026
2.	B. Pharmacy (Direct Entry)	**10.05.2026** (09.00AM to12:15PM)	By 21.05.2026
3.	B.Sc. (HM & CT)/BHMCT	**09.05.2026** (09.00AM to 11.00AM)	By 21.05.2026
4.	MCA	**10.05.2026** (02.00PM to 04:00 PM)	By 21.05.2026
5.	MBA and MBA(T&HM)	**10.05.2026** (02.00PM to 04:00 PM)	By 21.05.2026
6.	M.Sc. Physics	**10.05.2026** (09.00 AM to 11.00AM)	By 21.05.2026
7.	M.Sc. Environmental Sciences	**09.05.2026** (09.00AM to 11.00AM)	By 21.05.2026

3.5 Centres for Tests of HPCET-2026

- **For Courses (B. Tech. & B. Pharmacy Direct Entry)**

The centres will be established in Bilaspur, Chamba, Hamirpur, Mandi, Kangra, Shimla, Solan, Kullu, Sirmour, Una districts of HP and at Chandigarh.

- **For Courses [MCA, MBA & MBA (T&HM)], [B.Sc. (HM&CT)]/BHMCT, M.Sc. Physics and M.Sc. Environmental Sciences**

The centres will be established in Hamirpur, Mandi, Kangra and Solan districts of HP.

However, creation of a centres at a particular place will depend upon number of candidates opting for that place. The university reserves the right to change or cancel the centre.

3.6 Display of Answer Key for Challenges

The answer key for the courses of HPCET-2026 will be made available on the H.P. Technical University website immediately after the conduct of HPCET-2026.

Candidates can forward their written complaints, *if any*, along with supporting documents / solution pertaining to question paper / answer key which must reach in the office of the Controller of Examinations, H.P. Technical University, Hamirpur (H.P.)-177001 within two days of conduct of respective examinations by 05:00 PM either personally or through e-mail at **coehimtu@gmail.com** and /or at **arconduct@gmail.com**. No complaint of any kind, in this regard, shall be entertained after the due date and time.

3.7 Procedure to Resolve a Tie, if any

To break the tie, if any, in ranking procedure if the candidates have scored the same aggregate marks in HPCET-2026 or qualifying examination, the following procedure will be adopted:

(a) B. Tech. and B. Pharmacy (Direct Entry):

(i) If two applicants have the same HPCET-2026 aggregate marks, the candidate with higher marks in Physics will be ranked above.

(ii) If the marks in Physics are same, the higher marks in Chemistry would break the tie.

(iii) If the marks in Physics and Chemistry are same, then the marks in third subject would eventually be same. The qualifying examination *i.e.*10+2 marks would break the tie and it will be done during counseling there and then if the qualifying examination marks are not available in the HPCET-2026 application form.

(iv) If the qualifying examination marks are also same then the date of birth of the applicants will be considered. Elder candidate shall get the benefit of being ranked above.

(b) B.Sc. (HM & CT)/BHMCT:

(i) If two applicants have the same HPCET-2026 aggregate marks, the candidate with higher marks in General English will be ranked above.

(ii) If the marks in General English are same, the higher marks in General Knowledge would break the tie.

(iii) If the marks in General English and General Knowledge are same, the higher marks in Reasoning would break the tie.

(iv) If the marks in General English, General Knowledge and Reasoning are same, the higher marks in Data Interpretation would break the tie.

(v) If the marks in General English General Knowledge Reasoning and Data Interpretation are same. The qualifying examination *i.e.*10+2 marks would break the tie and it will be done during counseling there and then if the qualifying examination marks are not available in the HPCET-2026 application form.

(vi) If the qualifying examination marks are also same then the date of birth of the applicants will be considered. Elder candidate shall get the benefit of being ranked above.

(c) MCA, MBA, MBA (T&HM) (Direct Entry):

(i) If two applicants have the same HPCET-2026 aggregate marks, the candidate with higher marks in Verbal Ability and Reading Comprehension will be ranked above.

(ii) If the marks in Verbal Ability and Reading Comprehension are same, then a higher Data Interpretation and Logical Reasoning marks would break the tie.

(iii) If, the marks in Verbal Ability and Reading Comprehension, Data Interpretation and Logical Reasoning are same then a higher and Quantitative Ability marks would break the tie.

(iv) If the marks in Verbal Ability & Reading Comprehension, Data Interpretation and Logical Reasoning and Quantitative Ability would be the same. Then the qualifying examination *i.e.,* graduation marks would break the tie and it will be done during counseling there and then if the qualifying examination marks are not available in the HPCET-2026 application form.

(v) If the qualifying examination marks are also same then the date of birth of the applicants will be considered. Elder candidate shall get the benefit of being ranked above.

(d) M.Sc. Physics:

(i) If two applicants have the same HPCET-2026 aggregate marks, the candidate with higher marks in Mathematical methods, Classical mechanics and general properties of matter will be ranked above.

(ii) If the marks in Mathematical methods, Classical mechanics and general properties of matter are same, the higher marks in Optics, Electricity and magnetism would break the tie.

(iii) If the marks in Mathematical methods, Classical mechanics and general properties of matter and Optics, Electricity and magnetism are same, the higher marks in Modern Physics, Nuclear and Particle Physics would break the tie.

(iv) If the marks in Mathematical methods, Classical mechanics and general properties of matter, Optics, Electricity and magnetism, Modern Physics, Nuclear and Particle Physics are same, the higher marks in Atomic and Molecular, Kinetic Theory of gases and Thermodynamics, Solid state Physics and Electronics would break the tie.

(v) If the marks in Classical mechanics and general properties of matter, Optics, Electricity magnetism, Modern Physics, Nuclear and Particle Physics and Atomic and Molecular, Kinetic Theory of gases and Thermodynamics, Solid state Physics and Electronics are same, . The qualifying examination i.e. Graduation marks would break the tie and it will be done during counseling there and then if the qualifying examination marks are not available in the HPCET-2026 application form.

(vi) If the qualifying examination marks are also same then the date of birth of the applicants will be considered. Elder candidate shall get the benefit of being ranked above.

(e) M.Sc. Environmental Sciences:

(i) If two applicants have the same HPCET-2026 aggregate marks, the candidate with higher marks in Earth Sciences will be ranked above.

(ii) If the marks in Earth Sciences are same, the higher marks in Physical and Chemical Sciences would break the tie.

(iii) If the marks in Earth Sciences and 'Physical and Chemical Sciences' are same, the higher marks in Life Sciences would break the tie.

(iv) If the marks in Earth Sciences, 'Physical and Chemical Sciences' and Life Sciences are same. The qualifying examination *i.e.* Graduation marks would break the tie and it will be done during counseling there and then if the qualifying examination marks are not available in the HPCET-2026 application form.

(v) If the qualifying examination marks are also same then the date of birth of the applicants will be

considered. Elder candidate shall get the benefit of being ranked above.

3.8 Instructions for the Candidates to be adhered to during entrance test

(a) The Candidates are advised to bring with them a card board or a clipboard on which nothing should have been written) so that they have no difficulty in filling responses in the OMR sheet.

(b) Bring your own ball point pens (black/blue) of good quality.

(c) For aptitude test, candidates are advised to bring their own geometry box, pencils and erasers.

(d) Please check the e-admit card carefully for your name, centre allotted, place and category.

(e) The e-admit card is issued provisionally to the candidate subject to his/her fulfilling the prescribed eligibility conditions.

(f) The examination room / hall will be opened thirty minutes before the commencement of the examination/test. Candidates should take their seats immediately after opening of the examination hall. If the candidates do not report in time, they are likely to miss some of the general instructions to be announced in the examination hall.

(g) The candidate must show, on demand, the e-admit card and ID proof for admission in the examination room /hall. A candidate who does not possess the e-admit card duly electronically singed by Controller of Examinations shall not be permitted to appear in examination / test under any circumstances.

(h) Candidates shall maintain complete silence and attend to their question paper only. Any conversation or gesture or disturbance in the examination room/hall shall be deemed as misbehavior. If a candidate is found using unfair means or impersonating, his/her candidature shall be cancelled and he/she will be liable to be debarred for taking test either permanently or for a specified period according to the nature of offence.

(i) Candidates are not allowed to carry any textual material, calculators, document, slide rules, log tables, electronic watches with facilities of scientific calculator, printed or written material, bits of papers, mobile phone, pager or any other device, except the e-admit card, geometry box, pencils, erasers, card board or a clipboard and ball point pens (black/blue) inside the examination room / hall. If any candidate is in possession of any of the above items, his / her candidature will be treated as unfair means and his / her examination / test will be cancelled & he / she will also be debarred for future test(s) & the equipment will be seized.

(j) Candidates are advised to attempt only those subjects which he/she had filled in the application form. If a candidate attempts wrong subject combination, his/her candidature is liable to be cancelled and no correspondence shall be entertained in this regard.

(k) The candidate shall not remove any page(s) from the test booklet (in case of pen and paper based test) and if he/she is found to have removed any page(s) from his/her test booklet, he/she will be presumed to have used unfair means and shall be liable for criminal action.

(l) No candidate shall be allowed to carry any baggage inside the examination hall.

(m) No candidate, without the special permission of the Centre Superintendent or Invigilator concerned, will leave his/her seat or examination room until complete duration of examination.

(n) Use of electronic devices like mobile phone, calculator etc. is not permitted in the entrance examination. Materials like log table, book, notebook, etc. should not be brought in to the examination hall.

(o) The candidates are directed not to fold or mutilate the OMR sheet because these are to be checked by machine. Any OMR sheet, if found fold or mutilated, may not be scanned by the

computer and result of such candidate shall not be declared.

(p) The candidate shall handover the OMR sheet to the Centre Supdt. /Assistant Superintendent/Invigilator on duty before leaving the examination hall. However, the candidates are allowed to carry question booklet along with them.

(q) For each question four alternate answers will be available. The candidate has to darken only one circle using black /blue ball pen as correct answer.

(r) The correct method of marking answers is indicated below:

(i) Each question will be followed by answers marked as (a), (b), (c) or (d).

Select the most appropriate answer. Then using ball point pens (black /blue) the circle bearing the correct answer index against the serial number of the question on the OMR sheet completely. For example, if the answer to question 2 is c, it is marked as follows:

Question 2: (a) (b) (c) (d)

(ii) Some wrong methods of marking an answer:

Please do not mark your answer or fill up information by using any of the following methods of marking

(Use of Tick Mark) ✓ (Use of Cross Mark)

(Half Filled Circle)  (Use of Dot) 

(iii) Please note that the mark should be dark enough and the circle should be filled in as completely as possible. You need not to make special efforts to darken any circle artistically.

Chapter4: Guidelines for Submission Of Online Application Form

Instructions for online submission

1. Click on "**Register ->**" tab in **One Time Registration (OTR)** menu under Services. You will be redirected to Login/Signup Page.
2. In the login/Signup page click on "**As Student**" to apply for HPCET-2026 Application Form.
3. For New User, click on "**New User? Sign up for Citizen Login**". You will be redirected to Him Access Portal. Select "Aadhar Number" option form the Signup using drop-down list. Enter Your Aadhar number, provide your consent for Aadhaar eKYC and click on "Get OTP". Enter your OTP to validate your authenticity. Enter your personal details such as mobile number and e-mail ID as required. After completion of personal details, you will receive a "Unique Him Access ID". Note down your "Unique Him Access ID" for future reference.
4. If you have already registered and have a "Unique Him Access ID", Click on "As Student" menu. You have three options to Sign in to your account i.e.,

a. Through your "**Unique Him Access ID**"
b. Through your "**Registered Mobile Number"**.
c. Through "**Others**" option.

Note: You can use any of the above options to login to your account.

5. After login you will be redirected to your dashboard with menus on the left side i.e., "**Update Profile**", "**Courses List**", "**My Applications**" & "**Logout**".
6. Under the "**Update Profile**" menu there are four tabs i.e., "**Applicant Details**", "**Contact Details**", "**Qualification**" & "**Upload Photo**".

   6.1. **Applicant Details**: Fill all the required details and click on "Save & Continue" button. On the selection of **Nationality** as **Indian,** State dropdown list highlighting all Indian States will will be displayed and on the selection of **Others,** a textbox will be displayed where candidate will have to fill the name of the country he/she belonged.

   6.2. **Contact Details**: Fill your Permanent and Correspondence Address and click on "Save & Continue" button.

   6.3. **Qualification**: Fill your qualifications i.e., 10^{th}, 12^{th} & Graduation (if applicable) details carefully.

   6.4. **Upload Photo**: Upload your recent passport size photo & Signature with clear and white background.

   Note: The scanned images of photograph & Signature should be in *.jpg/*.jpeg /*.png format only and their sizes must be in between 60 to 100 kb.
7. After uploading the photo and signature, click on **"Complete Profile"** button and then click on **"Log Out"** menu. Login again through your credentials, only then **"Course List"** menu will be displayed to apply for a particular course.
8. Now, go to "**Courses list**" menu. All the courses are displayed under two categories: Post-Graduate Programs and Under-Graduate Programs. Choose the course you want to apply for carefully by clicking on "**Apply**" button.
9. The candidate can select/opt any course in which he/she desires to apply for HPCET-2026

among the following courses:

i) B. Tech
ii) B. Pharmacy
iii) B. Tech & B. Pharmacy (Both)
iv) BHMCT
v) B. Sc. HMCT
vi) BHMCT & B. Sc. HMCT (Both)
vii) MBA
viii) MCA
ix) MBA (T & HM)
x) MBA & MCA (Both)
xi) MBA & MBA (T & HM) (Both)
xii) MCA & MBA (T & HM) (Both)
xiii) MBA, MBA (T & HM), MCA (All)
xiv) M. Sc. Physics
xv) M. Sc. Environmental Science

Note: *The candidates who want to apply for two courses simultaneously i.e.* ***B. Tech & B. Pharmacy (Both)*** *or* ***MBA & MCA (Both)*** *or* ***MBA & MBA (T & HM) (Both) or MCA & MBA (T & HM) (Both)*** *or* ***MBA, MBA (T & HM), MCA (All)*** *must select the appropriate value from the course list and have to pay double/triple application processing fee as applicable. The candidates are advised not to fill the separate application forms for the above mentioned programmes to aviod inconvenience for the allottment of examination centres, roll numbers and conduct of examination on same date and time.*

10. After Clicking on "**Apply"** button you will be redirected to "**HPCET-2026 APPLICATION FORM**". Enter all the required fields to complete the form.

11. Under "**Quota**" select any value from the drop-down list i.e., **All India Quota (AIQ), Non-Resident Indian (NRI), Kashmiri Migrant (KM) & Himachal Pradesh State Quota (HPSQ).** On the selection of **AIQ (All India Quota) / KM (Kashmiri Migrant) / Non-Resident Indian (NRI)** from the **Quota** dropdown list, only **GENERAL** Category will show and if **HPSQ (Himachal Pradesh State Quota)** is selected then all Categories will show i.e. as per State Govt. reservation policy.

12. Select appropriate "**Category**" from the drop-down list i.e., ***General, Scheduled Caste (SC), Scheduled Tribe (ST), Other Backward Classes (OBC) & Economically Weaker Section (EWS)*** whichever is applicable.

13. Select the "**Course Minimum Qualification**" from the drop-down list as applicable.

Note: Select "**Course Minimum Qualification"** carefully and it must be same as per the "**Qualification Name / Stream**" under "**Qualification**" tab in the "**Update Profile**" menu.

14. Select your "**Sub-Category**" & "**Sub-Class**" as applicable.

15. Check the declaration box if all the entries are correct and click on "**Save Draft**" button.

16. You will be redirected to "**My Applications**" (menu) page showing details of all the applications you have applied for. Under the "Action" tab there are two buttons "**Edit Application**" & "**Submit Application**". If there is any correction in the application click on "**Edit Application**" button and edit the incorrect entry(ies), check the declaration box and click on "**Update**" button. If all the entries in the form are correct click on "**Submit Application**" button to finally submit the HPCET-2026 Application form.

Note: Please note down that no further editing will be allowed if the candidate submits the application.

17. After clicking "**Submit Application**" button a pop-up message with text "Make Payment. Your application has been submitted successfully! Your application number is: HPCET26XXXXXX. Kindly complete your application by making the required payment."
18. Go to "My Applications" menu, click on **"₹ Pay XXXX**" to complete the payment of HPCET-2026 Application Form. Click on "**Proceed to Payment**" button page will be redirected to payment gateway. Choose a payment method and make the payment. After successful transaction/payment the system will be redirected to "**My Applications**" page. Here candidate can download the final PDF of HPCET-2026 Application Form.

    Note: If PDF icon to download the *.pdf file is not displayed after successful payment, then click on "₹ Pay XXXX" button to confirm the payment.
19. If the .PDF file of the HPCET 2026 Application Form is not generated by the system after making the successful payment, the candidate has to wait for at least 2 working Days. After the verification of payment from the Account Department the Candidate can download the .PDF of application form from their login dashboard. After that if .PDF is still not generated, the candidate may contact at technical helpline number: 01972-226914 or email at id: queryadmission@outlook.com along with the mandatory details including ***Form No., Transaction number and Screenshot of Payment.***
20. Candidate must avoid making multiple payments against the same Application/Form Number. If the multiple payments against the same application/form number is made by the candidate, the candidate may fill the refund form which is available on the official website of University in Examination =>Download Forms => Examination/re-evaluation fee refund form. Filled refund form must be send through mail at id: finofficerhimtu@gmail.com and have to wait for at least one month to complete the refund process by the University.

Important Note:

- HPTU reserves its right to alter or modify the Information Brochure Part-I of HPCET-2026.
- All correspondence related to HPCET-2026 should be addressed to the Controller of Examinations, Himachal Pradesh Technical University, Daruhi, Hamirpur (H.P.)– 177001. The Application Number printed on the computer-generated application form (PDF) must be mentioned in all such correspondences.

PHYSICS

UNIT 1: Units and Measurements

Units of measurements, System of units, SI Units, fundamental and derived units, least count, significant figures, Errors in measurements. Dimensions of Physics quantities, dimensional analysis and its applications.

UNIT 2: Kinematics

The frame of reference, motion in a straight line, speed and velocity, uniform and non-uniform motion, average speed and instantaneous velocity, uniformly accelerated motion, velocity-time, position-time graph, relations for uniformly accelerated motion, relative velocity.

Motion in a plane, projectile motion, uniform circular motion.

UNIT 3: Laws of Motion

Force and inertia, Newton's first law of motion, momentum, Newton's second Law of motion, impulse, Newton's third Law of motion. Law of conservation of linear momentum and its applications, equilibrium of concurrent forces.

Static and Kinetic friction, laws of friction, rolling friction.

Dynamics of uniform circular motion, centripetal force and its applications: vehicle on a level circular road, vehicle on a banked road.

UNIT 4: Work, Energy and Power

Work done by a constant force and a variable force, kinetic and potential energies, work-energy theorem, power.

The potential energy of a spring, conservation of mechanical energy, conservative and non- conservative forces, motion in a vertical circle. Elastic and inelastic collisions in one and two dimensions.

UNIT 5: Rotational Motion

Centre of mass of a two-particle system, centre of mass of a rigid body. Basic concepts of rotational motion, moment of a force, torque, angular momentum, conservation of angular momentum and its applications.

The moment of inertia, the radius of gyration, values of moments of inertia for simple geometrical objects, parallel and perpendicular axes theorems and their applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions.

UNIT 6: Gravitation

The universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Kepler's law of planetary motion. Gravitational potential energy, gravitational potential. Escape velocity, motion of a satellite, orbital velocity, time period and energy of satellite.

UNIT 7: Properties of Solids and Liquids

Elastic behaviour, stress-strain relationship, Hooke's Law, Young's modulus, bulk modulus and modulus of rigidity.

Pressure due to a fluid column, Pascal's law and its applications, effect of gravity on fluid pressure, viscosity, Stoke’s law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's principle and its applications.

Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension: drops, bubbles and capillary rise.

Heat, temperature, thermal expansion, specific heat capacity, calorimetry, change of state, latent heat. Heat transfer: conduction, convection and radiation.

UNIT 8: Thermodynamics

Thermal equilibrium and the concept of temperature, zeroth law of thermodynamics, heat, work and internal energy. The first law of thermodynamics, isothermal and adiabatic processes. The second law of thermodynamics: reversible and irreversible processes.

UNIT 9: Kinetic Theory of Gases

Equation of state of a perfect gas, work done on compressing a gas, kinetic theory of gases: assumptions, the concept of pressure, kinetic interpretation of temperature, RMS speed of gas molecules, degrees of freedom, law of equipartition of energy and applications to specific heat capacities of gases, mean free path, Avogadro's number.

UNIT 10: Oscillations and Waves

Oscillations and periodic motion: time period, frequency, displacement as a function of time, periodic functions. Simple harmonic motion (S.H.M.) and its equation, phase, oscillations of a spring: restoring force and force constant, energy in S.H.M.: kinetic and potential energies, simple pendulum: derivation of expression for its time period.

Wave motion, longitudinal and transverse waves, speed of the travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, beats.

UNIT 11: Electrostatics

Electric charges: conservation of charge, Coulomb's law forces between two point charges, forces between multiple charges, superposition principle and continuous charge distribution.

Electric field: electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in a uniform electric field.

Electric flux, Gauss's law and its applications to find field due to infinitely long uniformly charged straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell.

Electric potential and its calculation for a point charge, electric dipole and

system of charges, potential difference, equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Conductors and insulators, dielectrics and electric polarization, capacitors and capacitance, the combination of capacitors in series and parallel and capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.

UNIT 12: Current Electricity

Electric current: drift velocity, mobility and their relation with electric current, Ohm's law, electrical resistance, I-V characteristics of Ohmic and non-ohmic conductors, electrical energy and power, electrical resistivity and conductivity, series and parallel combinations of resistors, temperature dependence of resistance.

Internal resistance, potential difference and emf of a cell, a combination of cells in series and parallel.

Kirchhoff’s laws and their applications, Wheatstone bridge, Metre Bridge.

UNIT 13: Magnetic Effects of Current and Magnetism

Biot - Savart law and its application to the current carrying circular loop, Ampere's law and its applications to infinitely long current carrying straight wire and solenoid.

Force on a moving charge in uniform magnetic and electric fields, force on a current-carrying conductor in a uniform magnetic field, the force between two parallel currents carrying conductors-definition of ampere, torque experienced by a current loop in a uniform magnetic field: Moving coil galvanometer, its sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole moment, bar magnet as an equivalent solenoid, magnetic field lines, magnetic field due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis, torque on a magnetic dipole in a uniform magnetic field, para-, dia- and ferromagnetic substances with examples, the effect of temperature on magnetic properties.

UNIT 14: Electromagnetic Induction and Alternating Currents

Electromagnetic induction: Faraday's law, induced emf and current, Lenz’s law, eddy currents, self and mutual inductance.

Alternating currents, peak and RMS value of alternating current/voltage, reactance and impedance, LCR series circuit, resonance, power in AC circuits, wattless current, AC generator and transformer.

UNIT 15: Electromagnetic Waves

Displacement current, electromagnetic waves and their characteristics, transverse nature of electromagnetic waves, electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, Gamma rays), applications of electromagnetic waves.

UNIT 16: Optics

Reflection of light, spherical mirrors, mirror formula. Refraction of light at plane and spherical surfaces, thin lens formula and lens maker formula, total internal reflection and its applications, magnification, power of a lens,

combination of thin lenses in contact, refraction of light through a prism, microscope and astronomical telescope (reflecting and refracting) and their magnifying powers.

Wave optics: wavefront and Huygens 'Principle, laws of reflection and refraction using Huygens principle. Interference: Young's double-slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. Polarization: plane-polarized light, Brewster's law, uses of plane- polarized light and Polaroid.

UNIT 17: Dual Nature of Matter and Radiation

Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations, Einstein's photoelectric equation, particle nature of light. Matter waves: wave nature of particle, de- Broglie relation.

UNIT 18: Atoms and Nuclei

Alpha-particle scattering experiment, Rutherford's model of atom, Bohr model, energy levels, hydrogen spectrum. Composition and size of nucleus, atomic masses, mass-energy relation, mass defect, binding energy per nucleon and its variation with mass number, nuclear fission and fusion.

UNIT 19: Electronic Devices

Semiconductors, semiconductor diode: I-V characteristics in forward and reverse bias, diode as a rectifier; I-V characteristics of LED, the photodiode, solar cell, Zener diode, Zener diode as a voltage regulator.

Logic gates (OR. AND. NOT. NAND and NOR).

UNIT 20: Experimental Skills

Familiarity with the basic approach and observations of the experiments and activities:

1. Vernier calipers -its use to measure the internal and external diameter and depth of a vessel.
2. Screw gauge-its use to determine the thickness/ diameter of thin sheet/wire.
3. Simple pendulum-dissipation of energy by plotting a graph between the square of amplitude and time.
4. Metre scale - the mass of a given object by the principle of moments.
5. Young's modulus of elasticity of the material of a metallic wire.
6. Surface tension of water by capillary rise and effect of detergents,
7. Co-efficient of viscosity of a given viscous liquid by measuring the terminal velocity of a given spherical body.
8. Speed of sound in air at room temperature using a resonance tube,
9. Specific heat capacity of a given (i) solid and (ii) liquid by method of mixtures.
10. The resistivity of the material of a given wire using a metre bridge.
11. The resistance of a given wire using Ohm's law.
12. Resistance and figure of merit of a galvanometer by half deflection method.
13. The focal length of

(i) Convex mirror
(ii) Concave mirror and
(iii) Convex lens, using the parallax method.

14. The plot of the angle of deviation vs angle of incidence for a triangular prism.
15. The refractive index of a glass slab using a travelling microscope.
16. Characteristic curves of a p-n junction diode in forward and reverse bias.
17. Characteristic curves of a Zener diode and finding reverse breakdown voltage.
18. Identification of diode, LED, resistor, a capacitor from a mixed collection of such items

CHEMISTRY

PHYSICAL CHEMISTRY

UNIT I: SOME BASIC CONCEPTS IN CHEMISTRY

Matter and its nature, Dalton's atomic theory, Concept of atom, molecule, element and compound, Laws of chemical combination, Atomic and molecular masses, mole concept, molar mass, percentage composition, empirical and molecular formulae, Chemical equations and stoichiometry.

UNIT 2: ATOMIC STRUCTURE

Nature of electromagnetic radiation, photoelectric effect, spectrum of the hydrogen atom, Bohr model of a hydrogen atom - its postulates, derivation of the relations for the energy of the electron and radii of the different orbits, limitations of Bohr's model, dual nature of matter, de Broglie's relationship, Heisenberg uncertainty principle, elementary ideas of quantum mechanics, the quantum mechanical model of the atom and its important features, concept of atomic orbitals as one-electron wave functions, variation of and with r for 1s and 2s orbitals, various quantum numbers (principal, angular momentum and magnetic quantum numbers) and their significance, shapes of s, p and d - orbitals, electron spin and spin quantum number, rules for filling electrons in orbitals – Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of elements and extra stability of half-filled and completely filled orbitals.

UNIT 3: CHEMICAL BONDING AND MOLECULAR STRUCTURE

Kossel-Lewis approach to chemical bond formation, the concept of ionic and covalent bonds. Ionic Bonding: Formation of ionic bonds, factors affecting the formation of ionic bonds; calculation of lattice enthalpy.

Covalent Bonding: Concept of electronegativity, Fajan’s rule, dipole moment, Valence Shell Electron Pair Repulsion (VSEPR) theory and shapes of simple molecules.

Quantum mechanical approach to covalent bonding: Valence bond theory - its important features, the concept of hybridization involving s, p and d orbitals, resonance.

Molecular Orbital Theory - Its important features, LCAOs, types of molecular orbitals (bonding, antibonding), sigma and pi-bonds, molecular orbital electronic configurations of homonuclear diatomic molecules, the concept of bond order, bond length and bond energy.

Elementary idea of metallic bonding, hydrogen bonding and its applications.

UNIT 4: CHEMICAL THERMODYNAMICS

Fundamentals of thermodynamics: System and surroundings, extensive and intensive properties, state functions, entropy, types of processes.

The first law of thermodynamics - Concept of work, heat, internal energy and enthalpy, heat capacity, molar heat capacity, Hess’s law of constant heat summation, Enthalpies of bond dissociation, combustion, formation, atomization, sublimation, phase transition, hydration, ionization and solution.

The second law of thermodynamics - Spontaneity of processes, ΔS of the universe and ΔG of the system as criteria for spontaneity. ΔG°(Standard Gibbs energy change) and equilibrium constant.

UNIT 5: SOLUTIONS

Different methods for expressing the concentration of solution - molality, molarity, mole fraction, percentage (by volume and mass both), the vapour pressure of solutions and Raoult's Law - Ideal and non- ideal solutions, vapour pressure - composition, plots for ideal and non- ideal solutions, Colligative properties of dilute solutions - a relative lowering of vapour pressure, depression of freezing point, the elevation of boiling point and osmotic pressure, determination of molecular mass using colligative properties, abnormal value of molar mass, van't Hoff factor and its significance.

UNIT 6: EQUILIBRIUM

Meaning of equilibrium is the concept of dynamic equilibrium.

Equilibria involving physical processes: Solid-liquid, liquid-gas, gas-gas and solid-gas equilibria, Henry's law. General characteristics of equilibrium involving physical processes.

Equilibrium involving chemical processes: Law of chemical equilibrium, equilibrium constants (K_p and K_c) and their significance, the significance of ΔG and ΔG° in chemical equilibrium, factors affecting equilibrium concentration, pressure, temperature, the effect of catalyst, Le Chatelier's principle.

Ionic equilibrium: Weak and strong electrolytes, ionization of electrolytes, various concepts of acids and bases (Arrhenius, Bronsted - Lowry and Lewis) and their ionization, acid-base equilibria (including multistage ionization) and ionization constants, ionization of water, pH scale, common ion effect, hydrolysis of salts and pH of their solutions, the solubility of sparingly soluble salts, solubility products and buffer solutions.

UNIT 7: REDOX REACTIONS AND ELECTROCHEMISTRY

Electronic concepts of oxidation and reduction, redox reactions, oxidation number, rules for assigning oxidation number and balancing of redox reactions.

Electrolytic and metallic conduction, conductance in electrolytic solutions, molar conductivities and their variation with concentration, Kohlrausch's law and its applications.

Electrochemical cells - Electrolytic and Galvanic cells, different types of electrodes, electrode potentials including standard electrode potential, half-cell and cell reactions, emf of a Galvanic cell and its measurement, Nernst equation and its applications, relationship between cell potential and Gibbs' energy change, dry cell and lead accumulator, fuel cells.

UNIT 8: CHEMICAL KINETICS

Rate of a chemical reaction, factors affecting the rate of reactions: concentration, temperature, pressure and catalyst, elementary and complex reactions, order and molecularity of reactions, rate law, rate constant and its units, differential and integral forms of zero and first-order reactions, their characteristics and half-lives, the effect of temperature on the rate of reactions, Arrhenius theory, activation energy and its calculation, collision theory of bi-molecular gaseous reactions (no derivation).

INORGANIC CHEMISTRY

UNIT 9: CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES

Modern periodic law and present form of the periodic table, s, p. d and f block elements, periodic trends in properties of elements atomic and ionic radii, ionization enthalpy, electron gain enthalpy, valence, oxidation states and chemical reactivity.

UNIT 10: p- BLOCK ELEMENTS

Group -13 to Group 18 Elements

General Introduction: Electronic configuration and general trends in physical and chemical properties of elements across the periods and down the groups, unique behaviour of the first element in each group.

UNIT 11: d - and f- BLOCK ELEMENTS

Transition Elements - General introduction, electronic configuration, occurrence and characteristics, general trends in properties of the first-row transition elements - physical properties, ionization enthalpy, oxidation states, atomic radii, colour, catalytic behaviour, magnetic properties, complex formation, interstitial compounds, alloy formation, preparation, properties and uses of $K_2Cr_2O_7$ and $KMnO_4$.

Inner Transition Elements

Lanthanoids - Electronic configuration, oxidation states and Lanthanoid contraction.

Actinoids - Electronic configuration and oxidation states.

UNIT 12: COORDINATION COMPOUNDS

Introduction to coordination compounds. Werner's theory, ligands, coordination number, denticity, chelation, IUPAC nomenclature of mononuclear co-ordination compounds, isomerism, Bonding: Valence bond approach and basic ideas of Crystal field theory, colour and magnetic properties, importance of coordination compounds (in qualitative analysis, extraction of metals and in biological systems).

ORGANIC CHEMISTRY

UNIT 13: PURIFICATION AND CHARACTERISATION OF ORGANIC COMPOUNDS

Purification - Crystallization, sublimation, distillation, differential extraction and chromatography - principles and their applications.

Qualitative analysis - Detection of nitrogen, sulphur, phosphorus and halogens.
Quantitative analysis (basic principles only) - Estimation of carbon, hydrogen, nitrogen, halogens, sulphur and phosphorus.

Calculations of empirical formulae and molecular formulae, numerical problems in organic quantitative analysis,

UNIT 14: SOME BASIC PRINCIPLES OF ORGANIC CHEMISTRY

Tetravalency of carbon, shapes of simple molecules - hybridization (s and p): classification of

organic compounds based on functional groups and those containing halogens, oxygen, nitrogen and sulphur, homologous series: Isomerism - structural and stereoisomerism.

Nomenclature (Trivial and IUPAC)

Covalent bond fission - Homolytic and heterolytic, free radicals, carbocations and carbanions, stability of carbocations and free radicals, electrophiles and nucleophiles.

Electronic displacement in a covalent bond

- Inductive effect, electromeric effect, resonance and hyperconjugation.

Common types of organic reactions- Substitution, addition, elimination and rearrangement.

UNITS 15: HYDROCARBONS

Classification, isomerism, IUPAC nomenclature, general methods of preparation, properties and reactions.

Alkanes - Conformations: Sawhorse and Newman projections (of ethane), mechanism of halogenation of alkanes.

Alkenes - Geometrical isomerism, mechanism of electrophilic addition, addition of hydrogen, halogens, water, hydrogen halides (Markownikoffs and peroxide effect), Ozonolysis and polymerization.

Alkynes - Acidic character, addition of hydrogen, halogens, water and hydrogen halides, polymerization.
Aromatic hydrocarbons - Nomenclature, benzene - structure and aromaticity, mechanism of electrophilic substitution, halogenation, nitration.

Friedel-Craft's alkylation and acylation, directive influence of the functional group in mono-substituted benzene.

UNIT 16: ORGANIC COMPOUNDS CONTAINING HALOGENS

General methods of preparation, properties and reactions, nature of C-X bond, mechanisms of substitution reactions.

Uses, environmental effects of chloroform, iodoform, freons and DDT.

UNIT 17: ORGANIC COMPOUNDS CONTAINING OXYGEN

General methods of preparation, properties, reactions and uses.

ALCOHOLS, PHENOLS AND ETHERS

Alcohols: Identification of primary, secondary and tertiary alcohols, mechanism of dehydration.
Phenols: Acidic nature, electrophilic substitution reactions, halogenation, nitration and sulphonation, Reimer - Tiemann reaction.

Ethers: Structure.

Aldehyde and Ketones: Nature of carbonyl group, nucleophilic addition to >C=O group, relative reactivities of aldehydes and ketones, important reactions such as - Nucleophilic addition reactions (addition of HCN, NH_3 and its derivatives), Grignard reagent, oxidation, reduction (Wolf Kishner and Clemmensen), the acidity of -hydrogen. Aldol condensation, Cannizzaro reaction, Haloform reaction, chemical tests to distinguish between aldehydes and ketones.

Carboxylic Acids: Acidic strength and factors affecting it.

UNIT 18: ORGANIC COMPOUNDS CONTAINING NITROGEN

General methods of preparation, properties, reactions and uses.
Amines: Nomenclature, classification, structure, basic character and identification of primary, secondary and tertiary amines and their basic character.

Diazonium Salts: Importance in synthetic organic chemistry.

UNIT 19: BIOMOLECULES

General introduction and importance of biomolecules.

CARBOHYDRATES – Classification, aldoses and ketoses, monosaccharides (glucose and fructose) and constituent monosaccharides of oligosaccharides (sucrose, lactose and maltose).

PROTEINS - Elementary idea of -amino acids, peptide bond, polypeptides, proteins: primary, secondary, tertiary and quaternary structure (qualitative idea only), denaturation of proteins, enzymes.

VITAMINS – Classification and functions.

NUCLEIC ACIDS – Chemical constitution of DNA and RNA, biological functions of nucleic acids.

Hormones (General introduction)

UNIT 20: PRINCIPLES RELATED TO PRACTICAL CHEMISTRY

Detection of extra elements (Nitrogen, sulphur, halogens) in organic compounds, detection of the following functional groups, hydroxyl (alcoholic and phenolic), carbonyl (aldehyde and ketones) carboxyl and amino groups in organic compounds.

- The chemistry involved in the preparation of the following:

Inorganic compounds, Mohr's salt, potash alum.

Organic compounds: Acetanilide, p-nitro acetanilide, aniline yellow, iodoform.

- The chemistry involved in the titrimetric exercises – acids, bases and the use of indicators, oxalic-acid vs KMnO4, Mohr's salt vs KMnO4
- Chemical principles involved in the qualitative salt analysis:

Cations – $Pb^{2+,}$ $Cu^{2+,}$ Al^{3+}, Fe^{3+}, Zn^{2+}, Ni^{2+}, Ca^{2+}, Ba^{2+}, Mg^{2+}, NH_4^+

Anions- CO_3^{2-}, S^{2-}, SO_4^{2-}, NO_3^-, NO_2^-, Cl^-, Br^-, I^- (Insoluble salts excluded).

Chemical principles involved in the following experiments:

1. Enthalpy of solution of $CuSO_4$
2. Enthalpy of neutralization of strong acid and strong base.
3. Preparation of lyophilic and lyophobic sols.
4. Kinetic study of the reaction of iodide ions with hydrogen peroxide at room temperature.

MATHEMATICS

UNIT 1: SETS, RELATIONS AND FUNCTIONS:

Sets and their representation; Union, intersection and complement of sets and their algebraic properties; Power set; Relations, type of relations, equivalence relations, functions; one-one, into and onto functions, the composition of functions.

UNIT 2: COMPLEX NUMBERS AND QUADRATIC EQUATIONS:

Complex numbers as ordered pairs of reals, Representation of complex numbers in the form $a + ib$ and their representation in a plane, Argand diagram, algebra of complex numbers, modulus and argument (or amplitude) of a complex number, Quadratic equations in real and complex number systems and their solutions; Relations between roots and coefficients, nature of roots, the formation of quadratic equations with given roots.

UNIT3: MATRICES AND DETERMINANTS:

Matrices, algebra of matrices, type of matrices, determinants and matrices of order two and three, evaluation of determinants, area of triangles using determinants; Adjoint and inverse of a square matrix; Test of consistency and solution of simultaneous linear equations in two or three variables using matrices.

UNIT 4: PERMUTATIONS AND COMBINATIONS:

The fundamental principle of counting, permutations and combinations; Meaning of $P(n, r)$ and $C(n, r)$. Simple applications.

UNIT 5: BINOMIAL THEOREM AND ITS SIMPLE APPLICATIONS:

Binomial theorem for a positive integral index, general term and middle term and simple applications.

UNIT 6: SEQUENCE AND SERIES:

Arithmetic and Geometric progressions, insertion of arithmetic, geometric means between two given numbers, Relation between A.M and G.M.

UNIT 7: LIMIT, CONTINUITY AND DIFFERENTIABILITY:

Real–valued functions, algebra of functions; polynomial, rational, trigonometric, logarithmic and exponential functions; inverse functions. Graphs of simple functions. Limits, continuity and differentiability. Differentiation of the sum, difference, product and quotient of two functions. Differentiation of trigonometric, inverse trigonometric, logarithmic, exponential, composite and implicit functions; derivatives of order upto two, Applications of derivatives: Rate of change of quantities, monotonic-Increasing and decreasing functions, Maxima and minima of functions of one variable.

UNIT 8: INTEGRAL CALCULAS:

Integral as an anti-derivative, Fundamental integrals involving algebraic, trigonometric, exponential and logarithmic functions. Integration by substitution, by parts and by partial fractions. Integration using trigonometric identities. Evaluation of simple integrals of the type

$\int \frac{dx}{x^2+a^2}$, $\int \frac{dx}{\sqrt{x^2 \pm a^2}}$, $\int \frac{dx}{a^2-x^2}$, $\int \frac{dx}{\sqrt{a^2-x^2}}$, $\int \frac{dx}{ax^2+bx+c}$, $\int \frac{dx}{\sqrt{ax^2+bx+c}}$, $\int \frac{(px+q)dx}{ax^2+bx+c}$,

$\int \frac{(px+q)dx}{\sqrt{ax^2+bx+c}}$ $\int \sqrt{a^2 \pm x^2}\, dx$, $\int \sqrt{x^2 - a^2}\, dx$

The fundamental theorem of calculus, properties of definite integrals. Evaluation of definite integrals, determining areas of the regions bounded by simple curves by simple curves in standard forms.

UNIT 9: DIFFRENTIAL EQUATIONS :

Ordinary differential equations, their order and degree, the solution of differential equation by the method of separation of variables, solution of a homogeneous and linear differential equation of the type $\frac{y}{x} + x\, y(\ni (x)$.

UNIT 10: CO-ORDINATE GEOMETRY :

Cartesian system of rectangular coordinates in a plane, distance formula, sections formula, locus and its equation, the slope of a line, parallel and perpendicular lines, intercepts of a line on the co-ordinate axis.

Straight line: Various forms of equations of a line, intersection of lines, angles between two lines, conditions for concurrence of three lines, the distance of a point form a line, co-ordinate of the centroid, ortho centre and circumcentre of a triangle.

Circle, conic sections: A standard form of equations of a circle, the general form of the equation of a circle, its radius and centre, equation of a circle when the endpoints of a diameter are given, points of intersection of a line and a circle with the centre at the origin and sections of conics, equations of conic sections (parabola, ellipse and hyperbola) in standard forms**.**

UNIT 11: THREE DIMENSIONAL GEOMETRY :

Coordinates of a point in space, the distance between two points, section formula, direction ratios and direction cosines and the angle between two intersecting lines. Equation of a line; Skew lines, the shortest distance between them and its equation.

UNIT 12: VECTOR ALGEBRA :

Vectors and scalars, the addition of vectors, components of a vector in two dimensions and three-dimensional spaces, scalar and vector products.

UNIT 13: STATISTICS AND PROBABILITY :

Measures of dispersion; calculation of mean, median, mode of grouped and ungrouped data, calculation of standard deviation, variance and mean deviation for grouped and ungrouped data. Probability: Probability of an event, addition and multiplication theorems of probability, Baye's theorem, probability distribution of a random variable.

UNIT 14: TRIGONOMETRY :

Trigonometrical identities and trigonometrical functions, inverse trigonometrical functions their properties.

BIOLOGY

UNIT 1: DIVERSITY IN LIVING WORLD

- What is living? ; Biodiversity; Need for classification;; Taxonomy & Systematics; Concept of species and taxonomical hierarchy; Binomial nomenclature;
- Five kingdom classification; salient features and classification of Monera; Protista and Fungi into major groups; Lichens; Viruses and Viroids.
- Salient features and classification of plants into major groups-Algae, Bryophytes, Pteridophytes, Gymnosperms (three to five salient and distinguishing features and at least two examples of each category);
- Salient features and classification of animals-nonchordate up to phyla level and chordate up to classes level (three to five salient features and at least two examples).

UNIT 2: STRUCTURAL ORGANISATION IN ANIMALS AND PLANTS

- Morphology and modifications; Tissues; Anatomy and functions of different parts of flowering plants: Root, stem, leaf, inflorescence- cymose and recemose, flower, fruit and seed (To be dealt along with the relevant practical of the Practical Syllabus) Family (malvaceae, Cruciferae, leguminoceae, compositae, graminae).
- Animal tissues; Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (Frog). (Brief account only)

UNIT 3: CELL STRUCTURE AND FUNCTION

- Cell theory and cell as the basic unit of life; Structure of prokaryotic and eukaryotic cell; Plant cell and animal cell; Cell envelope, cell membrane, cell wall; Cell organelles- structure and function; Endomembrane system-endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, micro bodies; Cytoskeleton, cilia, flagella, centrioles (ultra structure and function); Nucleus-nuclear membrane, chromatin, nucleolus.
- Chemical constituents of living cells: Biomolecules-structure and function of proteins, carbodydrates, lipids, nucleic acids; Enzymes-types, properties, enzyme action, classification and nomenclature of anzymes
- B Cell division: Cell cycle, mitosis, meiosis and their significance.

UNIT 4: PLANT PHYSIOLOGY

- Photosynthesis: Photosynthesis as a means of Autotrophic nutrition; Site of photosynthesis take place; pigments involved in Photosynthesis (Elementary idea); Photochemical and biosynthetic phases of photosynthesis; Cyclic and non cyclic and
- photophosphorylation; Chemiosmotic hypothesis; Photorespiration C3 and C4 pathways; Factors affecting photosynthesis.
- Respiration: Exchange gases; Cellular respiration-glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); Energy relations- Number of ATP molecules generated; Amphibolic pathways; Respiratory quotient.
- Plant growth and development: Seed germination; Phases of Plant growth and plant growth rate; Conditions of growth; Differentiation, dedifferentiation and redifferentiation; Sequence of developmental process in a plant cell; Growth regulators- auxin, gibberellin, cytokinin, ethylene, ABA;

UNIT 5: HUMAN PHYSIOLOGY

- Breathing and Respiration: Respiratory organs in animals (recall only); Respiratory system in humans; Mechanism of breathing and its regulation in humans-Exchange of gases, transport of gases and regulation of respiration Respiratory volumes; Disorders related to respiration-Asthma, Emphysema, Occupational respiratory disorders.

- Body fluids and circulation: Composition of blood, blood groups, coagulation of blood; Composition of lymph and its function; Human circulatory system-Structure of human heart and blood vessels; Cardiac cycle, cardiac output, ECG, Double circulation; Regulation of cardiac activity; Disorders of circulatory system-Hypertension, Coronary artery disease, Angina pectoris, Heart failure.

- Excretory products and their elimination: Modes of excretion- Ammonotelism, ureotelism, uricotelism; Human excretory system-structure and fuction; Urine formation, Osmoregulation; Regulation of kidney function-Renin-angiotensin, Atrial Natriuretic Factor, ADH and Diabetes insipidus; Role of other organs in excretion; Disorders; Uraemia, Renal failure, Renal calculi, Nephritis; Dialysis and artificial kidney.

- Locomotion and Movement: Types of movement- ciliary, fiagellar, muscular; Skeletal muscle- contractile proteins and muscle contraction; Skeletal system and its functions (To be dealt with the relevant practical of Practical syllabus); Joints; Disorders of muscular and skeletal system-Myasthenia gravis, Tetany, Muscular dystrophy, Arthritis, Osteoporosis, Gout.

- Neural control and coordination: Neuron and nerves; Nervous system in humanscentral nervous system, peripheral nervous system and visceral nervous system; Generation and conduction of nerve impulse;

- Chemical coordination and regulation: Endocrine glands and hormones; Human endocrine system-Hypothalamus, Pituitary, Pineal, Thyroid, Parathyroid, Adrenal, Pancreas, Gonads; Mechanism of hormone action (Elementary Idea); Role of hormones as messengers and regulators, Hypo-and hyperactivity and related disorders (Common disorders e.g. Dwarfism, Acromegaly, Cretinism, goiter, exopthalmic goiter, diabetes, Addison's disease).

(*Imp: Diseases and disorders mentioned above to be dealt in brief.*)

UNIT 6: REPRODUCTION

- Sexual reproduction in flowering plants: Flower structure; Development of male and female gametophytes; Pollination-types, agencies and examples; Outbreeding devices; Pollen-Pistil interaction; Double fertilization; Post fertilization events- Development of endosperm and embryo, Development of seed and formation of fruit; Special modes- apomixis, parthenocarpy, polyembryony; Significance of seed and fruit formation.

- Human Reproduction: Male and female reproductive systems; Microscopic anatomy of testis and ovary; Gametogenesis-spermatogenesis & oogenesis; Menstrual cycle; Fertilisation, embryo development upto blastocyst formation, implantation; Pregnancy and placenta formation (Elementary idea); Parturition (Elementary idea); Lactation (Elementary idea).

- Reproductive health: Need for reproductive health and prevention of sexually transmitted diseases (STD); Birth control-Need and Methods, Contraception and Medical Termination of Pregnancy (MTP); Amniocentesis; Infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (Elementary idea for general awareness).

UNIT 7: GENETICS AND EVOLUTION

- Heredity and variation: Mendelian Inheritance; Deviations from Mendelism- Incomplete dominance, Co-dominance, Multiple alleles and Inheritance of blood groups, Pleiotropy; Elementary idea of polygenic inheritance; Chromosome theory of inheritance; Chromosomes and genes; Sex determination-In humans, birds, honey bee; Linkage and crossing over; Sex linked inheritance-Haemophilia, Colour blindness; Mendelian disorders in humans-Thalassemia; Chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

- Molecular basis of Inheritance: Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; Transcription, genetic code, translation; Gene expression and regulation- Lac Operon; Genome and human genome project; DNA finger printing, protein biosynthesis.

- Evolution: Origin of life; Biological evolution and evidences for biological evolution from Paleontology, comparative anatomy, embryology and molecular evidence); Darwin's contribution, Modern Synthetic theory of Evolution; Mechanism of evolution- Variation (Mutation and Recombination) and Natural Selection with examples, types of natural selection; Gene flow and genetic drift; Hardy-Weinberg's principle; Adaptive Radiation; Human evolution.

UNIT 8: BIOLOGY AND HUMAN WELFARE

- Health and Disease; Pathogens; parasites causing human diseases (Malaria, Filariasis, Ascariasis. Typhoid, Pneumonia, common cold, amoebiasis, ring worm, dengue, chikungunya); Basic concepts of immunology-vaccines; Cancer, HIV and AIDS; Adolescence, drug and alcohol abuse. Tobacco abuse.

- Microbes in human welfare: In household food processing, industrial production, sewage treatment, energy generation and as biocontrol agents and biofertilizers.

UNIT 9: BIOTECHNOLOGY AND ITS APPLICATIONS

- Principles and process of Biotechnology: Genetic engineering (Recombinant DNA technology).

- Application of Biotechnology in health and agriculture: Human insulin and vaccine production, gene therapy; Genetically modified organisms-Bt crops; Transgenic Animals; Biosafety issues-Biopiracy and patents.

UNIT 10: ECOLOGY AND ENVIRONMENT

- Organisms and environment Population interactions-mutualism, competition, predation, parasitism; Population attributes-growth, birth rate and death rate, age distribution.

- Ecosystem: Patterns, components; productivity and decomposition; Energy flow; Pyramids of number, biomass, energy

- Biodiversity and its conservation: Concept of Biodiversity; Patterns of Biodiversity; Importance of Biodiversity; Loss of Biodiversity; Biodiversity conservation; Hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, National parks and sanctuaries, Sacred, Groves.

APPENDIX-B

Syllabus of BHMCT/B.Sc. (HM & CT)

Section A: General English
Comprehension of Passage, Verbal Reasoning, Syllogisms, Antonyms, Fill in the Blanks, Jumbled Paragraphs with 4 or 5 sentences, Sentence Correction, Sentence completion, Sentence Correction, odd man out, idioms, one-word substitution, Different usage of same word etc.

Section B: General Knowledge
Current National and International Affairs, Business, Punch line of companies, Top officials of big companies, Major corporate events, Trade and Commerce, Famous award and prizes Science, Scientific Inventions, Social Science, Geography, International organizations History, Social issues, Culture, Entertainment, Polities etc. Sports, Finance, Automobiles, Travel and Tourism.

Section C: Reasoning
Critical reasoning, Visual reasoning, Assumption- Premise- Conclusion, Assertion and reasons, Statements and assumptions, identifying valid inferences, identifying Strong arguments and Weak arguments, Statements and Conclusions, Cause and Effect, Identifying Probably true, Probably false, definitely true, definitely false kind of statement, Linear arrangements, Matrix arrangements.
Puzzles, Syllogisms, Functions, Family tree- identifying relationship among group of people, Symbol Based Problems, Coding and Decoding, Sequencing, identifying next number in series, etc.

Section D:
Data Interpretation: There will be questions of data interpretation which will be mostly based of various graphs.

Graphs: Column graphs, Bar Graphs, Line charts, Pie Chart, Graphs representing Area, Venn diagram etc.

APPENDIX-C

HPCET-2026 Syllabus for MCA, MBA, MBA (T&HM)

Section A: HPCET syllabus for VARC (Verbal Ability & Reading Comprehension- 25 questions, 100 marks).
The VARC section will be the first section of HPCET question paper, comprising two sub parts: **Verbal Ability & Reading Comprehension (VARC)**

(Q. No.: 1 to 25)

HPCET VARC SYLLABUS		
Fill in the blanks	Para completion and inference	Verbal logic
Verbal reasoning	Subject-verb agreement	Parajumbles
Sentence completion	Foreign language words used in English	Different usage of same word
Grammar	Reading comprehension	Idioms
Syllogisms	Analogies	Antonyms
Jumble paragraphs	Sentence correction	One word substitution
Parts of speech	Preposition	Type of clauses
Phrases modifiers	Error in tenses	Articles usage

Section B: HPECT syllabus for DILR (Data Interpretation & Logical Reasoning-25 questions, 100 marks)
Data Interpretation & Logical Reasoning (DILR) comprises the second section of this question paper and is to be solved after the VARC section. It consists of two sub parts: **Data Interpretation and Logical Reasoning (DILR)**

(Q. No.: 26 to 50)

HPCET DILR SYLLABUS		
Blood Relations	Clock sand Calendars	Syllogism
Series	Statements	Venn Diagram
Propositions	Data Arrangement	Data Structures
Direction Sense	Family Tree	Tables
Coding-Decoding	Binary Logic	Pie Charts
Assumptions	Seating Arrangement	Data Sufficiency
Puzzles	Sets & Caselets	Bars & Line Graphs

Section C: HPCET syllabus for QA (Quantitative Aptitude - 25 questions, 100 marks)
Quantitative Aptitude will be the third & last section of this question paper.

(Q. No.: 51 to 75)

HPCET QA SYLLABUS		
Geometry	Ratios and Proportion	Inequalities
Trigonometry	In-equations Quadratic and linear equations	Work and Time
Algebra	Surds and Indices	Percentages
Mensuration	Time-Speed-Distances	Logarithms
Partnership(Accounts)	Number System	Square root and Cube root
Profit &Loss	Geometric Progression	Probability
Mean, mode, median	Binomial theorem	Simple interest and Compound interest

APPENDIX-D

Syllabus of M.Sc. Physics

Section-A

Mathematical methods

Infinite sequences and series- convergence and divergence, conditional and absolute convergence, ration test for convergence. Calculus of single and multiple variable, partial derivatives, Jacobian, Imperfect and perfect differentials. Taylor Expansion, Vector algebra, Vector Calculus, Multiple integrals, Divergence theorem, Green's theorems, Stokes' theorem, Orthogonal coordinate systems. First order equations and linear second order differential equations with constant coefficients. Linear vector spaces, linear independence, basis. Matrices and determinants, Hermitian adjoint and inverse of a matrix; Hermitian, orthogonal and unitary matrices; Eigenvalue and eigenvectors. Fourier expansion- statement of Dirichlet's condition, analysis of simple waveforms and Fourier series. Probability distributions and error analysis.

Classical mechanics and general properties of matter

Newton's laws of motion and applications, Velocity and acceleration in Cartesian, Polar and cylindrical coordinate systems. Uniformly rotating frame, Centrifugal and Coriolis forces, System of particles. Center of mass, Equation of motion of the CM, Conservation of linear and angular momentum, Conservation of energy, Variable mass systems Motion under a central force, Kepler's laws Gravitational Law and field, Conservative and nonconservative forces Elastic and inelastic collisions. Differential equation for simple harmonic oscillator and its general solution, Superposition of two or more simple harmonic oscillators, Lissajous figures, Damped and forced oscillators, resonance, Wave equation, travelling and standing waves in one dimension, Energy density and energy transmission in waves, Group velocity and phase velocity, Sound waves in media, Doppler Effect. Rigid body motion, Euler angles, Fixed axis rotations. Moments of Inertia and products of Inertia, Parallel and perpendicular axes theorem, Principal moments and axes. Kinematics of moving fluids, Equation of continuity, Euler's equation, Bernulli's theorem.

Section-B

Optics

Fermat's principle, General theory of image formation, Thick lens, Thin Lens and lens combinations. Huygen's Principle, Interference of light, Optical path retardation, interferometers. Fraunhofer diffraction, Rayleigh criterion and resolving power, Diffraction gratings. Linear, Circular and elliptic polarization, Double refraction and optical rotation. Lasers, principle and working.

Electricity and magnetism

Electricity and Magnetism: Coulomb's law, Gauss's law, Electric field and potential Electrostatic boundary conditions, Solution of Laplace's equation for sample cases. Conductors, Capacitors, Dielectrics, Dielectric polarization Volume and surface charges, energy stored in Electromagnetic field Biot-Savart law, Ampere's law, Faraday's law of electromagnetic induction, Self and mutual inductance. Alternating currents, Simple DC and AC circuits with R, L and C components. Displacement current, Maxwell's equations and plane electromagnetic waves, poynting's theorem. Lorentz Force and motion of charged particles in electric and magnetic fields. Reflection and refraction at a dielectric interface, Transmission and reflection coefficients.

Section-C

Modern Physics

Inertial frames and Galilean invariance, Postulates of special relativity, Lorentz transformations, length contraction, Time dilation, Relativistic velocity addition theorem, Mass energy equivalence. Blackbody radiation, Planck's law, Rayleigh-Jeans and Wein's Law, Photoelectric effect, Compton Effect. Bohr's atomic model, Sommerfeld's correction, X-rays. Wave-particle duality, Uncertainty principle. Wave function and it's interpretation, wave packets, Dynamical variables as operators, measurement of observables, expectation values. Commutation relations between operators and compatibility, observables and simultaneous measurements, Ehrefest's theorem. Schrodinger equation and its solution for one, two and three dimensional boxes, Solution of Schrodinger equation for the one dimensional harmonic oscillator, Reflection and transmission at a step potential.

Nuclear and Particle Physics

General properties of Nuclei, Nuclear Models: liquid drop model, condition of nuclear stability. Experimental evidence for nuclear magic numbers, elementary accounts of nuclear shell model and its predictions, Radioactivity, qualitative account of the theory of alpha decay and beta decay, Interaction of Nuclear Radiation with matter; Energy loss due to ionization energy loss of electrons, Cerenkov radiation, Rutherford scattering, Multiple coulomb scattering, passage of gamma-rays through matter. Compton scattering, pair production radiation loss by fast electrons, Radiation length and electrongamma showers, position a annihilation, Relativistic Kinematics. Particles Accelerators and Detectors, classification of elementary particles, Types of interactions and its features, Mass spectra and major decays of elementary particle; leptons, mesons, baryons, Weak and electromagnetic Decays of Strange mesons and Hyperons. Classification of weak decays and selection rules.

Section-D

Atomic and Molecular Physics

Spectroscopy Good quantum numbers and selection rules. Stern-Gerlach experiment, Fine structure, Magnetic moment of the electron, Lande g factor, Vector model-Space quantization. Zeeman effect. Explanation from vector atom model. Pauli exclusion principle, shell structure. Hund's rule, spectroscopic terms of many electron atoms in the ground state, Spectra of alkali and alkaline earth atoms. Rotational and vibrational spectra, Raman effect, Stokes and anti-stokes lines, complimentary character of Raman and Infrared spectra, experimental arrangements for Raman spectroscopy.

Kinetic Theory of Gases and Thermodynamics

Elements of Kinetic theory of gases. Velocity distribution and Equipartition of energy. Specific hear of Mono-, di-and tri-atomic gases. Ideal gas, van-der-Waals gas and equation of state. Mean free path. Laws of thermodynamics. Zeroth law and concept of thermal equilibrium. First law and its consequences. Isothermal and adiabatic processes. Reversible, irreversible and quasi-static processes. Second law and entropy. Carnot cycle. Maxwell's thermodynamic relations and simple applications. Ideas of ensembles, Maxwell-Baltzmann, Fermi-Dirac and Bose-Einstein distributions.

Solid State Physics and Electronics

Basics of Crystal Structure: Lattice and basis, primitive and unit cell, Wigner Seitz cell, symmetry operations, lattice types, paeking fraction, Miller indices, simple structures NaCL, diamond. Diffraction Methods: Bragg's Law, experimental arrangements. Laue equation, reciprocal lattice, atomic scattering factor, geometrical structure factors. Crystal bonding: potential between a pair of atoms, LennardJones potential, Ionic, Covalent,

Vander- Wall's cohesive energy, Lattice Vibration, specific heat Einstein and Debye's models of specific heat. Free electron theory of metals, Band Theory of Metals: Kronig Penny model, Brillouin zones, electrons in periodic structure, energy bands, energy gaps, effective mass of electrons and holes, metals, insulators, semiconductors, Magnetism, Curie-Weiss law, Langevin theory, basics of superconductivity. Junction Diodes, Transistors their characteristics and simple circuit design: Thevnim's Theorem, Norton Theorem, Constant Voltage and current generator, idea of equivalent circuits, low frequency equivalent circuits, low frequency equivalent circuits, h-parameters, bias stability, thermal runaway, BIJ, FET' s and MOSFETS: Structure and working FET amplifier. Oscillators: Tuned Collector, Hartley and Colpitts oscillators, phase shift oscillators. Operational Amplifier, Inverting noninverting amplifier, OP-Amp as adder subtractor, comparator, integrator and differentiator. Modulation and detection, Digital electronic fundamentals, various number systems, Basic logic gates, de-Morgan's law.

APPENDIX-E

Syllabus of M.Sc. Environmental Sciences

Section A

Earth Sciences: Structure and composition of Environment- Atmosphere, Hydrosphere and Lithosphere, Earth Processes, Mineral and Power Resources in India, Biogeochemical Cycles, Meteorology, Climate Change, Origin and evolution of earth, Mineral and Power Resources in India.

Section B

Physical and Chemical Sciences: Fundamentals, Atmospheric Chemistry, Water Chemistry, Geochemistry, Green Chemistry, Water-Physics characterstics, buffering capacity, Essential and trace elements in living systems, Bio-molecules-chemical components of cell, Bio-geochemical cycles-carbon, nitrogen and phosphorus, Hydrological cycle and global water balance, Toxicity of Heavy metals.

Section C :

Life Sciences
Origin of life: Theories of evolution, genetic drift, speciation , cell organelles, cell division, modes of reproduction, principles of inheritance, epistasis, mutations, chromosomal aberrations, extra-chromosomal inheritance.

Genetic Material: DNA structure and replication, transcription and translation, chromosome structure, protein structure, mutability and repair of DNA, reverse genetics.
Photosynthesis, Plant growth hormones, Dormancy and seed germination, Respiration.

Plant and Animal Systematics: Bryophytes, Tracheophytes, Gymnosperms, Angiosperms. Membrane structure and Ion transport, ATPase- structure and function, Photosynthesis, Photoperiodism, Vernalization, RUBISCO.

Animal systematic, physiology and diseases: Cnidaria, Echinodermata, Chordata, Protostomia; Anatomy and physiology of humans; major classes of bacterial and viral pathogens, Apoptosisand cancer, inherited diseases, animal cell culture.

Eclology and Environment: Biosphere, Organizational level of biosphere, Ecosystem: Structure and Types, Food Chain and Energy Flow, Population and community Ecology, Biodiversity andits Conservation.
Microbiology and Biotechnology: Principles of Microbiology, Microbiology of Air, Water, Soil, Sewage, Recombinant DNA technology, principles of gene cloning, transposition, applications of biotechnology in medicine, industry, agriculture and environment.

Natural resources and Management: Natural Resources-Forest, Water, Minerals Marine, Energy (Renewable and Nonrenewable)- Sources, Threats, Conservation and Management.
Global Environmental issues: Ozone depletion and Global warming, Acid rain and Smog, Sustainable Development.

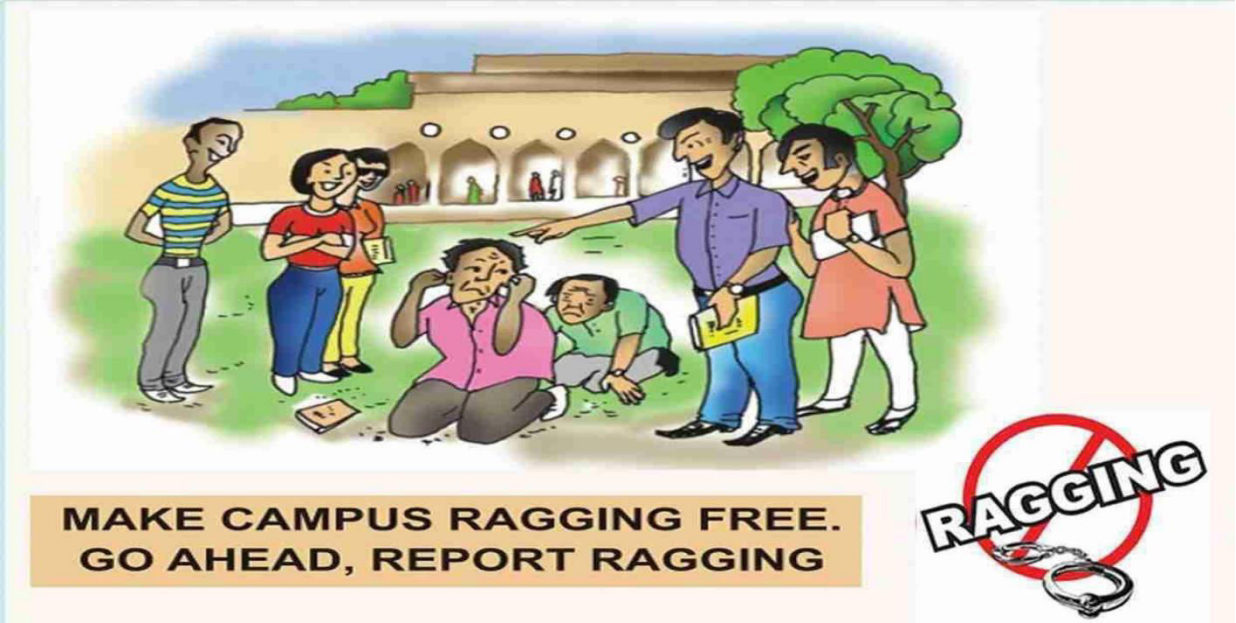
Environmental Pollution: Air, Water, Soil, Noise Pollution- Sources, Causes, Effects, Consequences.
Waste Management: Solid waste- Disposal, Management; Waste of energy conservation.
Instrumentation: Principles and applications of microscopy, spectrophotometer, centrifugation, radioisotope techniques, electrophoresis and chromatographic separation techniques, Blotting and hybridization techniques.

APPENDIX-F

Under Graduate Engineering Entry level qualification: 10+2 level

SN	Major Disciplines	Mandatory courses At 10+2 Level	Other relevant course(s) for This discipline
1	Civil Engineering	Phy, Chem, Maths	NA
2	Computer Science & Engineering / Computer Science & Engineering (Artificial Intelligence & Machine Learning) / Computer Science & Engineering(Artificial Intelligence & Data Science)	Phy, Maths	#For remaining single course, select any courses out of 14
3	Electrical Engineering/Electrical & Electronics Engineering / Electronics and communication Engineering	Phy, Maths	#For remaining single course, select any courses out of 14
4	Mechanical Engineering	Phy, Chem, Maths	NA
5	Architecture	As per Norms of Council of Architecture (CoA)	

Physics/ Mathematics / Chemistry/ Computer Science/Electronics/Information Technology/ Biology/ Informatics Practices/Biotechnology/Technical Vocational subject/Agriculture/Engineering Graphics/ Business Studies/Entrepreneurship.



Punishment for Participation in/or Abetment of Ragging:

- Cancellation of admission.
- Suspension from attending classes.
- Withholding/withdrawing scholarship/fellowship and other benefits.
- Debarring from appearing in any test/examination or other evaluation process.
- Withholding results.
- Debarring from representing the institution in any National or International meet, tournament, youth festival, etc.
- Suspension/expulsion from the hostel.
- Rustication from the institution for period varying from 1to 4 semesters or equivalent period.
- Expulsion from the institution and consequent debarring from admission to any other institution.