VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of the UGC Act, 1956)

VITEEE - 2020

Information Brochure

Contents

INSTRUCTIONS FOR FILLING UP OF OMR APPLICATION FORM

- The cost of the application is **non-refundable.**
- Please make sure that you are using the correct application form.
- Read the instructions before filling the Application Form.
- Your application will be machine-processed. Hence, kindly use only black ball-point pen and CAPITAL letters to write and only HB2 pencil to shade the circles.
- Do not scribble, smudge, tear or wrinkle the OMR sheet.
- Your photo should be in colour, less than six months old and should have a full, unobscured view of your face in front of a white background. Avoid attested photographs.
- Write the complete address giving your name and PINCODE correctly and legibly. Please note that this block will appear as such in all our correspondence with you. In case you happen to make a mistake, cover the whole box with a slip of white paper of the same size and write your address on it. Your address should be written only within the box.
- The use of the address of any coaching centre/ Institution is strictly prohibited. If anybody uses the address of any coaching centre / Institution in his / her application form, it will be rejected.
- Using an adhesive, paste the photograph in the space provided. Do not staple, pin, stitch or stick anything on to the application form.
- Ensure the correctness of your mailing address, the PINCODE, valid e-mail ID, telephone number with correct STD CODE and mobile number. **Please note that VIT will not be responsible if communications do not reach you due to incomplete or illegible address, invalid e-mail ID or wrong mobile number.**
- Ensure that your application is complete in all respects. An incomplete application or an application filled in a language other than English will be summarily rejected.
- Please retain a copy of the OMR application form for your future reference.
- You must quote your application number for reference in all your future correspondence.
- The filled-in OMR form should be enclosed in the envelope provided, should sent through Registered Post or Speed Post, so as to reach the Office of Admissions on or before **29th February 2020 to the printed address on the envelope.**
- VIT will not be responsible for any postal delay or irregularity or loss in postal transit.
- Options given in the application form cannot, in general, be altered at a later stage.
- For online application form visit www.vit.ac.in
- For downloading admit card visit www.vit.ac.in
- Online applicants need not fill OMR application form

CHECK LIST

Before posting the application please ensure the following:

- Please ensure all the fields are filled-in
- Affixed photograph (No stapling)
- Filled in complete postal address, to which communication is to be sent, clearly and legibly with correct PINCODE
- Provided your correct E-Mail address & Mobile number.
- Signed in the space for signature. No enclosures of any kind in your application; Taken a photocopy of filled-in OMR sheet

1. Introduction

VIT has carved out a niche for itself as an excellent institution of higher education, on par with top universities of the world, in the field of technology. It has surpassed the notion of excellence within the country and has reached a pinnacle of glory and now rubs shoulders with the cream of world class institutions of the world. Under the able stewardship of its Founder Chancellor Dr. G. Viswanathan, VIT exudes an ambience which is a confluence of modernity, with the use of technology at all levels, infused with the age old traditional values of integrity and ethical sincerity.

An avid sense of joy and enthusiasm pervades the campus which bears testimony to the positive learning along with the nurturing of the mind and the body experienced by each and every student at VIT. There are abundant opportunities for the overall development of individual students which includes co curricular, extra curricular along with academics.

There is seamless mingling of the cultures of the world as VIT has a heterogeneous group of students from across the globe who are here, at VIT, by choice. VIT has always been dedicated in providing quality education in various Engineering disciplines of Science and Technology and has also made a mark in the field of research as well. The Institute follows a rigorous selection procedure to admit students into various programmes. An exclusive entrance examination for all B.Tech programmes, Vellore Institute of Technology Engineering Entrance Examination (VITEEE) is conducted for all those aspiring for a career in engineering.

VIT also has campuses in Chennai, Amaravati (AP) and Bhopal (MP) as well.

2. Engineering Programmes offered in VIT

Please refer our website for the updated list of programmes offered

a. B.Tech. programmes

Courses available at [1] Vellore, [2] Chennai, [3] VIT-AP, [4] VIT-Bhopal)

Aerospace Engineering [4]

Biotechnology [1]

Bioengineering [4]

Chemical Engineering [1]

Civil Engineering [1,2]

Computer Science and Engineering [1,2,3,4]

Computer Science and Engineering with spl. in Bioinformatics [1]

Computer Science and Engineering with spl. in Information Security [1]

Computer Science and Engineering and Business systems [1]

Computer Science and Engineering with spl. in Data Science [1]

Computer Science and Engineering with spl. in Internet of Things [1]

Computer Science and Engineering with spl. in Data Analytics [3]

Computer Science and Engineering with spl. in Networking & Security [3]

Computer Science and Engineering with spl. in AI and Machine Learning [2,4]

Computer Science and Engineering with spl. in Cyber Physical Systems [2]

Computer Science and Engineering with spl. in Artificial Intelligence [3]

Computer Science and Engineering with spl. in Gaming Technology [4]

Computer Science and Engineering with spl. in Cyber security & Digital Forensics [4]

Electrical and Electronics Engineering [1,2,4]

Electronics and Communication Engineering [1,2,3,4]

Electronics and Communication with spl.in Biomedical Engineering [1]

Electronics and Communication Engineering with spl. in Embedded Systems [3]

Electronics and Communication Engineering with spl. in VLSI [3]

Electronics and Instrumentation Engineering [1]

Electronics and Computer Engineering [2]

Fashion Technology [2]

Information Technology [1]

Mechanical with spl. in Automotive Engineering [1]

Mechanical Engineering [1,2,3,4]

Production and Industrial Engineering [1]

b. B.Des. programme

B.Des. Industrial Design [1]

3. Eligibility

a. Nationality: The applicant for admission should be a Resident / Non Resident Indian National / PIO Holder.

b. Age Limit: Candidates whose date of birth falls on or after 1st July 1998 are eligible to apply for VITEEE-2020. The date of birth as recorded in the High School Certificate will be considered authentic. Candidates should produce this certificate in original as proof of their age at the time of counselling, failing which, they will be disqualified.

c. Qualifying Examination: Candidates appearing for the VITEEE-2020 should have either completed or shall be appearing in 2020, in any one of the following qualifying examinations:

   i. The final examination of the 10+2 system of Higher Secondary Examination conducted by the State Board; Central Board of Secondary Education (CBSE, New Delhi), The Council for Indian School Certificate Examination (ISCE), New Delhi.

   ii. Intermediate or Two-year Pre-University Examination conducted by a recognized Board/ University.

   iii. High School Certificate Examination of the Cambridge University or International Baccalaureate Diploma of the International Baccalaureate Office, Geneva.

   iv. General Certificate Education (GCE) examination (London/Cambridge/Srilanka) at the Advanced (A) level.

   v. As per VIT Norms, Regular 'NIOS' board candidates are also eligible for VITEEE. They should produce the Migration Cum Transfer Certificate at the time of joining.

   vi. Candidates who have studied in Regular, Full Time and Formal Education are alone eligible to apply.

d. Eligibility Criteria in the Qualifying Examination:

   i. Candidates appearing for the VITEEE in 2020 should have secured minimum aggregate of 60% in Physics, Chemistry and Mathematics/Biology in the qualifying examination (+2/Intermediate).

   ii. The average marks obtained in the subjects Physics, Chemistry and Mathematics/Biology in the qualifying examination (+2/Intermediate) put together should be 50% for the following categories:

   Candidates belonging to SC/ST Community

   Candidates hailing from Jammu and Kashmir/ Ladakh and the North Eastern states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.

   iii. CERTIFICATE TO PROVE NATIVITY should be produced at the time of counselling, failing which they will not be considered for admission.

   iv. In case, the mark statement is not produced by the candidates at the time of admission, the decision of the Management regarding his/her eligibility and admission to the programme shall be final.

e. Subject Eligibility Criteria:

i. Candidates who have studied Physics, Chemistry and Mathematics in the qualifying examination is eligible for all the B.Tech. Degree programmes

ii. Candidates who have studied Physics, Chemistry and Biology in the qualifying examination is eligible only for B.Tech. Bio-stream Degree programmes as below, But after joining, registering for Mathematics as bridge course is mandatory.

iii. B.Tech. Bio-engineering, Biotechnology, CSE with spl. in Bioinformatics, ECE with spl. in Biomedical Engineering programmes

iv. Even though the admission is done as per the VITEEE ranking, the candidate have to fulfill the eligibility norms mentioned.

4. Application Forms

a. Issue of Application Forms - Online

Candidates can also apply online at **www.vit.ac.in** through the following mode :

Net banking /Credit card/Debit card/Paytm

The online applicants need not send the hard copy of the application form to the Institute.

b. Issue of Application Forms – OMR

- The Prospectus and the information brochure for the B.Tech programme, along with the necessary enclosures which include the Application Form and a printed self-addressed envelope, can be obtained against cash payment from the post offices as given in the VIT website: www.vit.ac.in
- Candidates can also obtain the application form in person from
  - VIT, Vellore Campus
  - VIT, Chennai Campus
  - VIT-AP
  - VIT-Bhopal
- Kindly purchase the information brochure / application form only through the means mentioned above and not from any private publisher/ vendor. **Fake application forms will be rejected.**

c. Instructions for completing the OMR sheet

- The application form should be filled by the candidate in his/ her own handwriting.
- It is suggested that the candidate make a photocopy of the form and use it for practice. ONLY THE ORIGINAL OMR APPLICATION FORM SHOULD BE SENT.
- Read the instructions carefully before filling the application form. Requests for corrections will not be entertained later. Refer the specimen copy enclosed in this brochure.
- Do not write or make any marks on the Barcode.
- **Please note that your name, and your date of birth should be exactly the same as given in your High school / +2 / Intermediate / Pre- University examination certificate**.
- Your application must be complete in all respects. **An incomplete application or application filled in a language other than English will be summarily rejected. Options filled by you in the application form cannot be changed at a later stage.**
- Please note down the ten digit application number for your future reference.

d. Returning the Completed OMR Application Form

- The application form duly completed should be checked to see, if all the items have been correctly filled and appropriate codes indicating your exact choice have been put in the right spaces provided against each.
- Please go through the checklist available inside the front cover of the brochure.
- Also ensure that you have adhered to the instructions for completing the computerized OMR application form in the brochure, before mailing the application. The application should be refolded along the

original fold only and inserted in the envelope provided.

- Your application should be sent either by Registered Post or Speed Post in the self-addressed envelope provided by VIT, so as to reach the office on or before 29th February, 2020. Before despatching the application form ensure that you have filled in the correct Test City Code, Subject and tick the checklist on the envelope provided.
- Incomplete application form shall not be considered and no correspondence shall be made in this regard. **The application form once sold shall not be taken back under any circumstances nor will the application fee be refunded in any case.**

e. Receipt of Completed OMR Application Form

- The last date for receipt of OMR completed application form at VIT is February 29, 2020.
- Any application received after the last date will not be accepted. Any delay in receiving the application by the candidate will not be considered a valid reason for late submission. The Institute will not accept responsibility for any postal delay, irregularity or loss in postal transit. **Do not enclose any document with the application form.**
- Please note that if your are applying through Web/ Mobile application, the application form should not be sent.

5. e-Tracking / SMS ttracking

For the benefit of the candidates, the following arrangements have been made to inform the status of the application, venue of the entrance examination and results.

Once the application is received by VIT, a message will be sent through SMS to the candidates (Indian candidates) stating that their application has been received at VIT. This would, however, be possible only if the mobile number is correctly shaded in the application form. The candidates may also track the status of their application by typing their application number in the VIT website. However, this feature can be availed only after 3 weeks of despatch of their application.

At the time of publication of the results, the rank will be intimated through SMS and it will also be made available in the website **www.vit.ac.in**

6. Test Cities for VITEEE-2020

- The VITEEE - 2020 will be held in **124 cities.** The list of Test Cities can be found **APPENDIX I** of this information brochure.

7. e-Admit Card

- The e-Admit card will be generated once the candidate has booked his/her schedule through the Online Test Booking System.
- The e-Admit card will be auto-generated for only those candidates who book a slot using the Online Test Booking system before the last date. For those who have not booked, slots will be generated based on the information given on the application form and availability of the slot.
- The e-Admit card will indicate the e-Admit card number, photograph of the student, address of the test center, test date and time selected by the candidate. Discrepancies, if any, must be brought to the notice of VIT immediately.
- The e-Admit card will be made available for candidates in **www.vit.ac.in**. Candidate should provide the application form number and Online Test Booking password to download the e-Admit card.
- The copy of the e-Admit card will also be emailed to the candidate.
- Candidates must provide a valid email ID in the application form. The e-Admit card will not be despatched to candidates via post or fax.
- Candidates should take a print out of the e-Admit card using the print option on A4 size paper only. Please ensure that all information on the e-Admit card including photograph is clearly visible on the print out.
- Candidates will not be permitted to appear for the test without valid e-Admit card.

- Candidates must not mutilate the e-Admit card or change any entry made therein after it has been authenticated and received by them. **Impersonation is a legally punishable offence.**
- The e-Admit card is an important document and it must be preserved and produced at the time of counselling / admission

Candidates will not be allowed to attend the test, without the following documents. Candidate should report to the selected test centre with:

i. e-Admit card

ii. Photocopy of the application form and

iii. Any one of the following for photo identification.

- School or college Photo ID card
- Twelfth Standard board exam hall ticket (or) admit card bearing photo
- Aadhar Card
- Passport
- Driving License
- Voter ID card
- IT Pan Card

- Admit card will not be processed if the Application is incomplete:
- In the case of an eligible candidate, whose application form is incomplete (For eg. Declaration not signed, photograph not affixed on the application form, address not clearly written, **invalid e-mail ID** etc.), the application will not be processed for the issue of an Admit Card. VIT does not take the responsibility to inform such candidates.
- Candidates are advised to thoroughly check the application form (OMR) before posting.

8. Biometric Verification:

- **Biometric registration** is a part of attendance and hall ticket verification process and VIT reserves the right to carry out the same either before or during the examination or both.
- Candidates who do not co-operate during the bio- metric registration process will not be allowed to take the examination and VIT reserves the right to disqualify such candidates. **Biometric authentication will be carried out again for the shortlisted candidates during counselling and admission**.
- Candidates are not allowed to carry any items other than the documents mentioned in information brochure to the examination hall. VIT will not be responsible for any loss of valuables.

Do's for the candidates

- Be present at the test centre as per the reporting time mentioned in the e-Admit card.
- Register your name in the registration counter and carry the e-Admit card and a valid ID proof for verification.
- Sit in your allotted seat only.
- Maintain perfect silence and work on your testing process only
- Sign the attendance sheet in the presence of the invigilator.

Dont's for the candidates

- Not allowed to carry any text material, printed or written, bits of papers or any material except the e-Admit card inside the test hall.
- Not permitted to carry any electronic devices like mobile phones, paging devices, calculators, spy cameras, blue-tooth devices and music systems.
- Not allowed to go outside the test hall till the completion of the entire duration of the exam time.

- Not allowed to eat or drink anything (snacks, tea, coffee and cool drinks etc.) inside the test hall. Plain water bottles with nothing written or printed on them will be allowed.
- Violation of any instruction and adoption of any unfair means in the examination hall will make the candidate ineligible for admission.
- Impersonation (or any such crimes) will be reported to Police.

9. Pattern of the Entrance Examination

a. Question Paper:

- All Questions will be of **Multiple Choice Question (MCQ) with the following sections**
  - PART-I – Mathematics / Biology
  - PART-II – Physics
  - PART-III – Chemistry
  - PART-IV – English
  - PART-V- Aptitude

- **MPCEA** - Candidates appearing in MPCEA in VITEEE (Mathematics/Physics/Chemistry/ English / Aptitude) are eligible for all the B.Tech. Degree programmes
- **BPCEA** - Candidates appearing in BPCEA in VITEEE (Biology/Physics/Chemistry/ English/ Aptitude) are eligible only for B.Tech. Bio-stream Degree programmes as below.
  1. Bio-engineering
  2. Biotechnology
  3. CSE with spl. in Bioinformatics
  4. ECE with spl. in Biomedical Engineering programmes
- But after joining, registering for Mathematics as bridge course is mandatory.
- The selection of subjects (MPCEA / BPCEA) should be mentioned on the application form itself.
- The questions will primarily be from the State Board of Higher Secondary Education and the CBSE syllabus. The syllabus for the Entrance Examination is given in **APPENDIX II** of this brochure.
- The aptitude section in VITEEE will be in addition to subjects viz. Maths or Biology, Physics, Chemistry, English and Aptitude. The number of questions for the respective sections in VITEEE will be, Maths or Biology (40 questions), Physics (35 questions), Chemistry (35 questions), Aptitude (10 questions) and English (5 questions).
- Each question is followed by 4 alternative answers. The candidate will have to choose the correct answer and click the same.
- No negative marks for wrong answers.
- The Question paper will be in English only.
- Mock / Demo Test : A mock test will be available to the candidates on the website www.vit.ac.in. This is mainly designed to provide the candidates awareness of the procedure and to get used to the various components of the exam. The mock test will give the candidate an idea of all the features of the entrance test. The mock test will be in the form of flash file that can be downloaded to the system and the candidate can go through the entire flash file of the demo/mock test any number of times.

10. Schedule of VITEEE-2020

- VIT Engineering Entrance Examination will be conducted **in 2nd (or) 3rd week of April, 2020**
- The duration of the entrance examination will be of **2 hours 30 minutes.**
- The exam will be conducted in 3 sessions in a day as under (Indian Standard Time)

I session - 9.00 am – 11.30 am / II session - 12.30 pm – 3.00 pm / III session - 4.00 pm – 6.30 pm

- Candidate may choose to appear in anyone of the specified sessions for opted question paper (MPCEA/ BPCEA) only.
- Mode of Entrance Examination is Computer Based Test only. Please refer to slot booking for further details in www.vit.ac.in **during the 3rd week of March - 2020.**

11. Important Instructions pertaining to VITEEE-2020

The salient features of the Computer Based Test are:

- The computer is connected to the server, which delivers the encrypted test in real time through a secure and reliable connection.
- It is the responsibility of the candidate to acquire these basic computer skills before appearing for the entrance test and the Institution cannot take responsibility for the same.

Computer Based Test Procedure

- The candidates must ensure that the computer allotted to them is switched on and any problem with the computer should be informed to the invigilator immediately.
- The questions appearing on the screen will be in English. All questions will be of Multiple Choice Question (MCQ) type. Each MCQ consists of a stem which may be in the form of a question or an incomplete statement and four responses labeled A, B, C and D. Only one of the four responses is the correct answer. Candidate needs to choose that answer. Candidates can navigate freely back and forth, through the questions.
- The number of examination days will be estimated based on the total number of applications received and the test centres will be given as chosen by the candidates in the application form.
- In the rare and unlikely event of a technical failure during the test, the candidate may be required to attempt the test again. Candidate must visit **www.vit.ac.in** regularly to obtain latest news, information and updates on the entrance test.
- VIT reserves the **right to reschedule** the examination for a candidate. The candidate will not be charged any additional entrance exam fee if the re-schedule is initiated by VIT. However, the candidate has to make his / her own arrangements at his / her cost similar to the original schedule to take the test in the revised schedule.
- Candidates should strictly submit only one application to appear for the VITEEE. If more than one application is found, the entire registration will be cancelled by VIT.

a. Online Test Booking System

- Online Test booking system is a web based online scheduling system available at **www.vit.ac.in.**
- Candidate should first choose the Test City (This should be the same as the one chosen on the application form) the date and the batch for the exams.
- The schedule bookings are done on **a 'first-come-first- served basis',** and are subject to the availability of the test centre, date and time.
- In case of non-booking of slot, the slot and the subject will be booked automatically by the Institution based on the information given on the application form.

b. Online Test Booking Password

- For both OMR and online applicants, the password will be sent by **email to the email address mentioned on the application form. Therefore, it is mandatory to give a valid e-mail address.**
- VIT will not be responsible for non-receipt of the e-mail, if the email address given is incomplete or incorrect.
- The security of your Online Test Booking Password is totally your responsibility. VIT will not be held accountable or responsible for any claim or loss that results directly or indirectly from any unauthorized use or misuse of your online test booking password.

- The Online Test Booking Password must be kept confidential. Do not disclose it to others or write them down or store them in a file on your computer or as auto save password. Your Online Test Booking Password is required only for the purpose of booking a schedule given by the Institute. Please note that the online test booking system will not allow the candidates to book a slot after the date of booking ends.

c. Online Test Booking Procedure

- While booking your test schedule, please ensure that you have a photocopy of the application form you submitted and the Online Test Booking Password.
- A slot once booked cannot be changed. Request for change of test city, date, slot and subject will not be entertained under any circumstances.
- In case of non-availability of slots in the test centre of your choice, the candidate may choose to book a slot in an alternative centre / date.
- The online test booking system is available only for those eligible candidates who have submitted the application form complete in all respects on or before the last date mentioned.
- It is the responsibility of the candidates to book their test schedule in the ONLINE TEST BOOKING SYSTEM within the stipulated time. VIT will not be held accountable for the non-bookings. **The entrance test fee will not be refunded under any circumstances in such cases.**
- The confirmation mail will be sent automatically to the candidate's email address after he / she has booked his / her schedule through the Online Test Booking System.
- Once the booking is complete, the e-Admit card will be generated which needs to be printed by the student from the same page. Reprint option is also available on the same URL link.

12. Equating Methodology:

Equating is a statistical process that is used to adjust scores on test forms (that are approximately equivalent) so that scores on the forms can be used interchangeably. Thus, equating is used to adjust scores of candidates who have taken different forms of a test, in order to facilitate meaningful and fair comparison for merit list and ranking of these candidates. The statistical procedure of Equip percentile Equating would be used by VIT to identify the percentile ranks for candidates, such that scores on different forms with the same percentile rank are considered to be equivalent. Thus, Percentile Rank is a unique and invariant position of the test taker in that group. A percentile Rank, say 90 Percentile Rank denotes that there are 90 percent of test takers who have scored below this score level and 10 percent above this test score. Candidates are advised not to make assumptions and predictions of their score or rank based on their own estimates of raw scores.

Since it is a CBT utmost care will be given for the valuation process. Hence there will be no revaluation of the answers.

13. Results

a. Rank List:

- A merit list will be prepared based on the total marks secured in VITEEE-2020.
- **Note:** There is no provision to send the marks of the candidates (selected or unselected) by post. At the time of publication of the results, the rank will be intimated through SMS, if the mobile number of the applicant is provided.
- Since the final ranks are scrutinized with extreme care, there is no provision for re-ranking and re-totaling. The photocopies of the answer sheets will not be made available. No correspondence in this regard will be entertained.
- Candidate should appear for the entrance only once. VIT has the right to hold the rank for the candidates appearing in VITEEE more than once.

b. Announcement of Results:

The entrance examination results will be available on the VIT website - www.vit.ac.in

14. Admission Procedure

- Appearance in VITEEE is mandatory for admission to undergraduate engineering programmes.
- Applicants who have not appeared for the VITEEE are not eligible for admission.
- The admission is based on the ranks secured by the applicant in the VITEEE-2020..
- Applicants will be called for counselling based the ranks to designated counselling centres in India on a particular day decided based on the VITEEE rank.
- The applicant or authorized blood relative should appear in person with relevant documents in original for verification. **Candidate will not be permitted to attend counselling more than once under any circumstances.**
- A provisional admission letter will be issued based on the your choice of programme and campus.
- **Once admitted, no change of campus or branch will be entertained.**
- **VIT does not have any agent and all payments will be in demand draft or bank transfer only in favour of 'VIT or Vellore Insitute of Technology'.**
- **Cash is not collected at any point of time**

15. Counselling Process

- The candidates should produce the following documents in original along with two sets of photocopies while reporting for counselling. Candidates will not be allowed to participate in the counselling process without these documents.
  a. VITEEE-2020 e-Admit Card, Counselling Admit card and VITEEE Result copy
  b. Class X Board Certificate as a proof of date of birth or any other age proof Certificate
  c. Mark sheet of Qualifying Examination (If available)/ XII Hall ticket (For candidates awaiting results)
  d. Community Certificate (For SC/ST only) for relaxation in eligibility
  e. Nativity Certificate (For candidates hailing from Jammu, Kashmir Ladakh, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura) for relaxation in eligibility.
  f. DEMAND DRAFT drawn in favour of 'Vellore Institute of Technology', payable at Vellore. Candidates without DD will not be permitted to attend counselling.
  g. Candidates will be allowed to participate in the counselling process, only after verification of documents, authentic records pertaining to identification, age, marksheets of qualifying examination, community, nativity (if applicable) and other eligibility criteria as specified in Section-3.
  h. If a candidate fails to produce any of these documents, he/she will not be considered for admission.
- If the mark statement of the qualifying exam has not been received before the date of counselling, the candidate would have to furnish an undertaking stating that if he/she fails to qualify as per the norms, it would lead him / her to forego his / her seat.
- It is the responsibility of the candidates to ascertain whether they possess the requisite qualifications for admission. Having been called for the test / counselling does not necessarily mean acceptance of the eligibility. If found ineligible at any point of time he/she will be treated as ineligible and admission will be cancelled as per the norms.
- It is mandatory that all the original relevant documents (such as Marks statement, Transfer Certificate, etc.,) should be submitted to the Admissions Office at the time of admission for verification.
- Admission to various programmes is however, subject to verification of facts from the original certificates/ documents of the candidates. In case, any discrepancy arises, even at a later point of time after admission,

the management reserves all rights to cancel the candidate's admission and this decision shall be final.

16. Programme fee

Please refer our website **www.vit.ac.in**

17. Scholarship under "GV School Development Programme" (GVSDP)

Please refer our website **www.vit.ac.in**

18. Payment of Balance Fees

- The balance fee in the form of a DD drawn in favour of 'Vellore Institute of Technology', payable at the respective campuses along with a covering letter should reach the **respective campus by post** within the date specified at the time of counselling. The candidates should write their name, application number, rank and the branch allotted at the time of counselling on the reverse side of the DD.
- The balance fee may be remitted through online. Please refer www.vit.ac.in for insturctions,
- Payment of Tuition and Hostel fees should be remitted within the stipulated time, failing which the admission will automatically stand cancelled without any further notice.
- Receiving of Payment after the due date will not be entertained and no intimation will be sent separately in this regard.
- The eligible scholarship will be awarded after complete verification of the documents. Hence the admitted candidates may remit the applicable fee fully.

19. Submission of documents for verification during Admission

- The following documents in original are required to be submitted at the time of Admission for verification:
  a. Qualifying examination mark statements of all attempts
  b. Transfer Certificate / School Leaving Certificate
  c. Migration Certificate (if issued by the board)
  d. Community Certificate (For SC/ST only)
  e. Nativity Certificate (For candidates hailing from Jammu and Kashmir/Ladakh and the North Eastern states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.)
  f. Provisional Admission Letter. (photo copy)
  g. Recent Passport size colour photos – 4 nos.
  h. Affidavit to be signed separately by Student, Parent and Hostel on a Rs.20/- Stamp Paper. (Format available on the website **www.vit.ac.in**)
  i. Physical Fitness Certificate.
  j. Copy of student profile (Please refer www.vit.ac.in for filling up through online link
- 2 sets of photocopies of all original documents (Except Affidavit & Physical Fitness Certificate)
- Candidates can download the acknowledgement for the documents submitted from the VIT website. **No written acknowledgement will be issued.**
- All the above mentioned documents shall be handed over to the Admissions Office for verification at the time of admission, failing which the provisional admission accorded will stand cancelled.

20. Refund of Fees

- Refund will be made as per the norms of UGC .
- **The Counselling processing fee is NON-REFUNDABLE,** but will be adjusted in the tuition fees once the candidate joins the Institute.

- The refund will be made as per the policy available in www.vit.ac.in. The same will be displayed during counselling process
- All refundable deposits will be returned, after deductions if any, at the time of completion of the course or on cancellation of admission.
- Refund will be made only after submission of original fee receipt, Provisional Admission letter, No Dues Certificate and original TC. The refund will be made through account transfer to the account number mentioned in the withdraw request. Therefore, provide correct account number details. In case of refund through DD, the DD will be made only in the name of the candidate.

a. Withdrawal before the commencement of the programme:

   In case of withdrawal before the commencement of programme, kindly give your request through online.

b. Withdrawal after the commencement of the programme:

   A student once enrolled for a course is expected to complete the same. He / She cannot withdraw from the Institute without informing the Registrar in writing. Otherwise he / she will be liable to pay fees for the period his / her name remains on the rolls.

c. Submission of 'No Dues' Certificate: A candidate who desires to leave the Institution after joining the programme should submit a 'NO DUES' Certificate from his/her respective school of study at VIT to get back his/her certificates. **This should be accompanied by the application for withdrawal duly signed by the Parent/ Guardian and the original fee receipt, provisional admission letter (Fax / e-mail request will not be considered) and Original Transfer Certificate/School leaving certificate.**

d. The certificates will be returned only on production of 'NO DUES' Certificate in the prescribed form, obtained from the Admissions Office.

21. General Discipline

- All candidates admitted to the Institute shall maintain good conduct, pay the requisite tuition fees and other charges in the stipulated dates, attend their classes regularly and abide by the rules and regulations of the Institution. If at any point of time, the conduct and character of a candidate is not satisfactory or is of a suspicious nature, the Management reserves the right, without assigning any reason, to make him/ her vacate the hostel or expel him/her from the Institute.
- Initial admission is applicable only for the first semester. Admitted students are expected to maintain registration until the completion of the course, to the satisfaction of the Institution.
- All students have to comply with the rules and regulations that are already in force and which may be amended from time to time by the competent authority during the period of study.

a. General Instructions

   - The date of commencement of classes will be mentioned in the provisional admission letter. No communication will be sent separately to the candidates regarding this. Candidates are advised to visit the Institution website for updates on changes, if any.
   - Candidates should report to classes within 7 days from the date of commencement of classes, failing which, the admission granted will be cancelled automatically and the fees paid will stand forfeited.
   - Semester system is followed and the medium of instruction and examination is in English only.

b. Measures for prevention of ragging at the Institution level: Ragging is totally prohibited in the institution and anyone found guilty of ragging and / or abetting ragging, whether actively or passively, or being a part of a conspiracy to promote ragging, is liable to be punished in accordance with these regulations as well as under the provisions of any penal law being in force. Ragging juniors in any form is forbidden. If anyone is found ragging his/her juniors, he/she can be rusticated from the Institution.

c. It is mandatory that candidates and parents who are attending counselling should sign an undertaking on **Rs. 20/- non-judicial bond paper.** (as per UGC Regulations-2009, www.ugc.ac.in)**.** Format is available on-

22. Hostel Accommodation- Vellore /Chennai / Amaravati (AP)/Bhopal (MP)

- Separate hostel accommodation is available for boys and girls in all the campuses. Candidates should report to the hostel within 7 days from the date of commencement of classes, failing which, the hostel allotment will be cancelled automatically and fees paid will stand forfeited for all premises.
- Hostel accommodation will be provided only to those candidates whose residence is beyond 100 kms radius from the Institution Campus. Single room accommodation will not be available for first year under-graduate students.

For details regarding Establishment Charges, Mess, etc., please visit www.vit.ac.in

23. Codes of the Test Cities – VITEEE – 2020

	Test City	Code		Test City	Code		Test City	Code
Andaman and Nicobar Islands	Port Blair	101	Jharkhand	Ranchi	143	Tamil Nadu	Coimbatore	184
Andhra Pradesh	Amaravati (AP)	102	Karnataka	Bangalore	144		Erode	185
	Ananthapur	103		Hubli	145		Kumbakonam	186
	Eluru	104		Mangalore	146		Madurai	187
	Guntur	105	Kerala	Kochi	147		Salem	188
	Kurnool	106		Kozhikode	148		Tiruchirapalli	189
	Nellore	107		Thiruvananthapuram	149		Tirunelveli	190
	Rajahmundry	108		Thrissur	150		Vellore	191
	Srikakulam	109	Madhya Pradesh	Bhopal	151	Telangana	Hyderabad	192
	Tanuku	110		Gwalior	152		Karim Nagar	193
	Tirupati	111		Indore	153		Khammam	194
	Vijayawada	112		Jabalpur	154		Mahbubnagar	195
	Vishakapatnam	113		Ujjain	155		Nalgonda	196
Arunachal Pradesh	Ita Nagar	114	Maharashtra	Amravati	156		Warangal	197
Assam	Dibrugarh	115		Aurangabad	157	Tripura	Agartala	198
	Guwahati	116		Latur	158	Uttar Pradesh	Agra	199
	Silchar	117		Mumbai	159		Aligarh	200
Bihar	Bhagalpur	118		Nagpur	160		Allahabad	201
	Gaya	119		Nashik	161		Bareilly	202
	Muzaffarpur	120		Pune	162		Gorakhpur	203
	Patna	121		Thane	163		Jhansi	204
Chandigarh	Chandigarh	122	Manipur	Imphal	164		Kanpur	205
Chattisgarh	Bhilai	123	Meghalaya	Shillong	165		Lucknow	206
	Bilaspur	124	Mizoram	Aizwal	166		Mathura	207
	Raipur	125	Nagaland	Dimapur	167		Meerut	208
Delhi	Delhi	126	Odisha	Berhampur	168		Moradabad	209
Goa	Goa	127		Bhubaneswar	169		Noida	210
Gujarat	Ahmedabad	128		Rourkela	170		Rae Bareli	211
	Rajkot	129	Puducherry	Puducherry	171		Saharanpur	212
	Surat	130	Punjab	Amritsar	172		Varanasi	213
	Vadodara	131		Bathinda	173	Uttarakhand	Dehradun	214
Haryana	Faridabad	132		Jalandhar City	174		Pant Nagar	215
	Gurgaon	133		Ludhiana	175		Roorkee	216
	Hissar	134	Rajasthan	Ajmer	176	West Bengal	Asansol	217
	Kurukshetra	135		Bikaner	177		Durgapur	218
Himachal Pradesh	Dharmasala	136		Jaipur	178		Kolkata	219
	Shimla	137		Jodhpur	179		Siliguri	220
Jammu & Kashmir	Jammu	138		Kota	180		Dubai	221
	Srinagar	139		Udaipur	181	Centers Abroad	Kuwait	222
Jharkhand	Bokaro	140	Sikkim	Gangtok	182		Muscat	223
	Dhanbad	141	Tamil Nadu	Chennai	183		Qatar	224
	Jamshedpur	142						

24. VITEEE – 2020-SYLLABUS

a. MATHEMATICS

i. Matrices and their Applications

Adjoint, inverse – properties, computation of inverses, solution of system of linear equations by matrix inversion method.

Rank of a matrix – elementary transformation on a matrix, consistency of a system of linear equations, Cramer's rule, non-homogeneous equations, homogeneous linear system and rank method.

Solution of linear programming problems (LPP) in two variables.

ii. Trigonometry and Complex Numbers

Definition, range, domain, principal value branch, graphs of inverse trigonometric functions and their elementary properties.

Complex number system - conjugate, properties, ordered pair representation.

Modulus **–** properties, geometrical representation, polar form, principal value, conjugate, sum, difference, product, quotient, vector interpretation, solutions of polynomial equations, De Moivre's theorem and its applications.

Roots of a complex number **-** n^{th} roots, cube roots, fourth roots.

iii. Analytical Geometry of two dimensions

Definition of a conic – general equation of a conic, classification with respect to the general equation of a conic, classification of conics with respect to eccentricity.

Equations of conic sections (parabola, ellipse and hyperbola) in standard forms and general forms- Directrix, Focus and Latus-rectum - parametric form of conics and chords - Tangents and normals – Cartesian form and parametric form- equation of chord of contact of tangents from a point (x1 ,y1) to all the above said curves.

Asymptotes, Rectangular hyperbola **–** Standard equation of a rectangular hyperbola.

iv. Vector Algebra

Scalar Product – angle between two vectors, properties of scalar product, and applications of dot product. Vector product, right handed and left handed systems, properties of vector product, applications of cross product.

Product of three vectors – Scalar triple product, properties of scalar triple product, vector triple product, vector product of four vectors, scalar product of four vectors.

v. Analytical Geometry of Three Dimensions

Direction cosines – direction ratios - equation of a straight line passing through a given point and parallel to a given line, passing through two given points, angle between two lines.

Planes – equation of a plane, passing through a given point and perpendicular to a line, given the distance from the origin and unit normal, passing through a given point and parallel to two given lines, passing through two given points and parallel to a given line, passing through three given non-collinear points, passing through the the line of intersection of two given planes, the distance between a point and a plane, the plane which containes

two gicewn lines (co-planear lines. angle between a line and a plane.

Skew lines - shortest distance between two lines, condition for two lines to intersect, point of intersection, collinearity of three points.

Sphere – equation of the sphere whose centre and radius are given, equation of a sphere when the extremities of the diameter are given.

vi. Differential Calculus

Limits, continuity and differentiability of functions - Derivative as a rate of change, velocity, acceleration, related rates, derivative as a measure of slope, tangent, normal and angle between curves.

Mean value theorem - Rolle's Theorem, Lagrange Mean Value Theorem, Taylor's and Maclaurin's series, L' Hospital's Rule, stationary points, increasing, decreasing, maxima, minima, concavity, convexity and points of inflexion.

Errors and approximations – absolute, relative, percentage errors - curve tracing, partial derivatives, Euler's theorem.

vii. Integral Calculus and its Applications

Simple definite integrals – fundamental theorems of calculus, properties of definite integrals.

Reduction formulae – reduction formulae for ∫sin n x dx and ò cos n x dx , Bernoulli's formula.

Area of bounded regions, length of the curve.

viii. Differential Equations

Differential equations - formation of differential equations, order and degree, solving differential equations (1st order), variables separable, homogeneous, linear equations and applications.

Second order linear differential equations - second order linear differential equations with constant co-efficients, finding the particular integral if f(x) = emx, sin mx, cos mx, x, x2.

ix. Probability Distributions

Probability – Axioms – Addition law - Conditional probability – Multiplicative law - Baye's Theorem - Random variable - probability density function, distribution function, mathematical expectation, variance

Theoretical distributions-discrete distributions (Binomial, Poisson distributions)- Continuous distributions (Normal distribution).

x. Discrete Mathematics

Functions–Relations –Sequence and series (AP, GP, HP)- Binomial theorem-Basics of counting.

Mathematical logic – logical statements, connectives, truth tables, logical equivalence, tautology, contradiction.

Groups-binary operations, semi groups, monoids, groups, order of a group, order of an element, properties of groups.

b. BIOLOGY

i. Taxonomy

Need for classification; three domains of life. Linnaean, Whittaker, Bentham and Hooker systems of classification. Salient features and classification of non-chordates up to phyla levels and chordates up to class levels. Morphology and anatomy of flowering plants. Structural organization in insects(cockroach)

ii. Cell and Molecular Biology

Cell theory. Prokaryotic cell and it's ultrastructure. Eukaryotic cell- cell wall, cell membrane, cytoskeleton, nucleus, chloroplast, mitochondria, endoplasmic reticulum, Golgi bodies, ribosomes, lysosomes, vacuoles and centrosomes. Cell cycle and division - amitosis, mitosis and meiosis. Search for genetic material; structure of DNA and RNA; replication, transcription, genetic code, translation, splicing, gene expression and regulation (lac operon) and DNA repair.

iii. Reproduction

Asexual reproduction – binary fission, sporulation, budding, gemmule formation and fragmentation. Vegetative propagation in plants, sexual reproduction in flowering plants and structure of flowers. Pollination, fertilization, development of seeds and fruits, seed dispersal, apomixis, parthenocarpy and poly-embryony. Human reproductive system. Gametogenesis, menstrual cycle, fertilization, implantation, embryo development upto blastocyst

formation, pregnancy, parturition and lactation. Assisted reproductive technologies.

iv. Genetics and evolution

Chromosomes - structure and types, linkage and crossing over, recombination of chromosomes, mutation and chromosomal aberrations. Mendelian inheritance, chromosomal theory of inheritance, deviation from Mendelian ratio (incomplete dominance, co-dominance, multiple allelism, pleiotrophy), sex linked inheritance and sex determination in humans. Darwinism, neo Darwinism, Hardy and Weinberg's principle and factors affecting the equilibrium: selection, mutation, migration and random genetic drift.

v. Human health and diseases

Pathogens, parasites causing human diseases (malaria, dengue, chickengunia, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control. Basic concepts of immunology, vaccines, antibiotics, cancer, HIV and AIDS. Adolescence, drug and alcohol abuse.

vi. Biochemistry

Structure and function of carbohydrates, lipids and proteins. Enzymes – types, properties and enzyme action. Metabolism - glycolysis, fermentation, Kreb's cycle and pentose phosphate pathway.

vii. Plant physiology

Movement of water, food, nutrients, gases and minerals. Passive diffusion, facilitated diffusion, and active transport. Imbibition, osmosis, apoplast and symplast transport and guttation. Macro and micronutrients and their deficiency symptoms. Transpiration, photosynthesis (light and dark reactions) and electron transport chain. Hormones and growth regulators, photo-periodism and vernalization. Nitrogen cycle and biological nitrogen fixation.

viii. Human physiology

Digestion and absorption, breathing and respiration, body fluids and circulation, excretory system, endocrine system, nervous system, skeletal and muscular systems. Locomotion and movement, growth, aging and death. Hormones - types of hormones, functions and disorders.

ix. Biotechnology and its applications

Recombinant DNA technology, applications in health, agriculture and industries; genetically modified organisms; Human insulin, vaccine and antibiotic production. Stem cell technology and gene therapy. Apiculture and animal husbandry. Plant breeding, tissue culture, single cell protein, fortification, Bt crops and transgenic animals. Microbes in food processing, sewage treatment, waste management and energy generation. Biocontrol agents and biofertilizers. Bio-safety issues, biopiracy and patents. Human and rice genome projects. DNA fingerprinting.

x. Biodiversity, ecology and environment

Ecosystems: components, types, pyramids, nutrient cycles (carbon and phosphorous), ecological succession and energy flow in an ecosystem; Biodiversity - concepts, patterns, importance, conservation, hot spots, endangered organisms, extinction, Red data book, botanical gardens, national parks, sanctuaries, museums, biosphere reserves and Ramsar sites. Environmental issues: pollution and its control. Solid and radioactive waste management. Climate change impact and its mitigation. Population attributes - growth, birth and death rate and age distribution.

c. PHYSICS

i. Laws of Motion & Work, Energy and Power

Law of conservation of linear momentum and its applications. Static and kinetic friction - laws of friction - rolling friction - lubrication. Work done by a constant force and a variable force; kinetic energy - work-energy theorem - power. Conservative forces: conservation of mechanical energy (kinetic and potential energies) - non-conservative forces: motion in a vertical circle - elastic and inelastic collisions in one and two dimensions.

ii. Properties of Matter

Elastic behaviour - Stress-strain relationship - Hooke's law - Young's modulus - bulk modulus - shear modulus of rigidity. - Poisson's ratio - elastic energy. Viscosity - Stokes' law - terminal velocity - streamline and turbulent flow

- critical velocity. Bernoulli's theorem and its applications.

Heat - temperature - thermal expansion: thermal expansion of solids - specific heat capacity: Cp, Cv - latent heat capacity. Qualitative ideas of Blackbody radiation: Wein's displacement Law - Stefan's law.

iii. Electrostatics

Charges and their conservation; Coulomb's law-forces between two point electric charges - Forces between multiple electric charges-superposition principle. Electric field - electric field due to a point charge, electric field lines; electric dipole, electric field intensity due to a dipole – behaviour of a dipole in a uniform electric field. Electric potential - potential difference-electric potential due to a point charge and dipole- equipotential surfaces - electrical potential energy of a system of two point charges.

Electric flux-Gauss's theorem and its applications. Electrostatic induction-capacitor and capacitance - dielectric and electric polarisation - parallel plate capacitor with and without dielectric medium - applications of capacitor - energy stored in a capacitor - Capacitors in series and in parallel - action of points - Van de Graaff generator.

iv. Current Electricity

Electric Current - flow of charges in a metallic conductor - drift velocity and mobility and their relation with electric current. Ohm's law, electrical resistance - V-I characteristics - electrical resistivity and conductivity-classification of materials in terms of conductivity - Carbon resistors - colour code for carbon resistors - combination of resistors - series and parallel -temperature dependence of resistance - internal resistance of a cell - potential difference and emf of a cell - combinations of cells in series and in parallel.

Kirchoff's law - Wheatstone's Bridge and its application for temperature coefficient of resistance measurement

Metrebridge - special case of Wheatstone bridge - Potentiometer principle - comparing the emf of two cells.

v. Magnetic Effects of Electric Current

Magnetic effect of electric current - Concept of magnetic field

Oersted's experiment - Biot-Savart law-Magnetic field due to an infinitely long current carrying straight wire and circular coil - Tangent galvanometer - construction and working - Bar magnet as an equivalent solenoid - magnetic field lines.

Ampere's circuital law and its application. Force on a moving charge in uniform magnetic field and electric field - cyclotron

Force on current carrying conductor in a uniform magnetic field - Forces between two parallel current carrying conductors. definition of ampere.

Torque experienced by a current loop in a uniform magnetic field - moving coil galvanometer - conversion to ammeter and voltmeter - current loop as a magnetic dipole and its magnetic dipole moment - Magnetic dipole moment of a revolving electron.

vi. Electromagnetic Induction and Alternating Current

Electromagnetic induction - Faraday's law - induced emf and current - Lenz's law. Self-induction - Mutual induction - self-inductance of a long solenoid - mutual inductance of two long solenoids. Methods of inducing emf - (i) by changing magnetic induction (ii) by changing area enclosed by the coil and (iii) by changing the orientation of the coil (quantitative treatment). AC generator - commercial generator. (Single phase, three phase). Eddy current - applications - transformer - long distance transmission. Alternating current - measurement of AC - AC circuit with resistance - AC circuit with inductor - AC circuit with capacitor - LCR series circuit - Resonance and Q - factor - power in AC circuits.

vii. Optics

Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal reflection and its applications, optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula. Magnification, power of a lens, combination of thin lenses in contact, combination of a lens and a mirror. Refraction and dispersion of light through a prism. Scattering of light-blue colour of sky and reddish appearances of the sun at sunrise and sunset.

Wave front and Huygens's principle - Reflection, total internal reflection and refraction of plane wave at a plane surface using wave fronts. Interference - Young's double slit experiment and expression for fringe width - coherent source - interference of light - Formation of colours in thin films - Newton's rings. Diffraction - differences between interference and diffraction of light- diffraction grating. Polarisation of light waves - polarisation by reflection - Brewster's law - double refraction - nicol prism - uses of plane polarised light and Polaroids - rotatory polarisation

– polarimeter

viii. Dual Nature of Radiation and Atomic Physics

Electromagnetic waves and their characteristics - Electromagnetic spectrum - Photoelectric effect - Light waves and photons - Einstein's photoelectric equation - laws of photoelectric emission - particle nature of light - photo cells and their applications.

Atomic structure - discovery of the electron - specific charge (Thomson's method) and charge of the electron (Millikan's oil drop method) - alpha scattering - Rutherford's atom model.

ix. Nuclear Physics

Nuclear properties - nuclear radii, masses, binding energy, density, charge - isotopes, isobars and isotones - nuclear mass defect - binding energy - stability of nuclei - Bainbridge mass spectrometer.

Nature of nuclear forces - Neutron - discovery - properties

artificial transmutation - particle accelerator. Radioactivity

alpha, beta and gamma radiations and their properties

Radioactive decay law - half life - mean life - artificial radioactivity - radio isotopes - effects and uses - Geiger - Muller counter. Radio carbon dating. Nuclear fission - chain reaction - atom bomb - nuclear reactor - nuclear fusion - Hydrogen bomb - cosmic rays - elementary particles.

x. Semiconductor Devices and their Applications

Semiconductor basics - energy band in solids: difference between metals, insulators and semiconductors

semiconductor doping - Intrinsic and Extrinsic semiconductors. Formation of P-N Junction - Barrier potential and depletion layer-P-N Junction diode - Forward and reverse bias characteristics - diode as a rectifier - Zener diode-Zener diode as a voltage regulator - LED. Junction transistors - characteristics - transistor as a switch - transistor as an amplifier - transistor as an oscillator.

Logic gates - NOT, OR, AND, EXOR using discrete components

NAND and NOR gates as universal gates - De Morgan's theorem - Laws and theorems of Boolean algebra.

d. CHEMISTRY

i. Atomic Structure

Bohr's atomic model-Sommerfeld's extension of atomic structure; Electronic configuration and Quantum numbers; Shapes of s,p,d,f orbitals - Pauli's exclusion principle - Hund's Rule of maximum multiplicity - Aufbau principle. Emission and absorption spectra, line and band spectra; Hydrogen spectrum - Lyman, Balmer, Paschen, Brackett and Pfund series; deBroglie's theory; Heisenberg's uncertainty principle

wave nature of electron - Schrodinger wave equation (No derivation). Eigen values and eigen functions. Hybridization of atomic orbitals involving s,p and d orbitals.

ii. p,d and f – Block Elements

p-block elements - Phosphorous compounds; PCl_3, PCl_5 - Oxides. Hydrogen halides, Inter halogen compounds. Xenon fluoride compounds. General Characteristics of d - block

elements - Electronic Configuration - Oxidation states of first row transition elements and their colours. Occurrence and principles of extraction: Copper, Silver, Gold and Zinc. Preparation and properties of $CuSO_4$, $AgNO_3$ and $K_2Cr_2O_7$. Lanthanides - Introduction, electronic configuration, general characteristics, oxidation state - lanthanide contraction, uses, brief comparison of Lanthanides and Actinides.

iii. Coordination Chemistry and Solid State Chemistry

Introduction - Terminology in coordination chemistry - IUPAC nomenclature of mononuclear coordination compounds. Isomerism, Geometrical isomerism in 4-coordinate, 6-coordinate complexes. Theories on coordination compounds - Werner's theory (brief), Valence Bond theory. Uses of coordination compounds. Bioinorganic com-

pounds (Haemoglobin and chlorophyll).

Lattice - unit cell, systems, types of crystals, packing in solids; Ionic crystals - Imperfections in solids - point defects. X-Ray diffraction - Electrical Property, Amorphous solids (elementary ideas only).

iv. Thermodynamics, Chemical Equilibrium and Chemical Kinetics

I and II law of thermodynamics - spontaneous and non spontaneous processes, entropy, Gibb's free energy - Free energy change and chemical equilibrium - significance of entropy.

Law of mass action - Le Chatlier's principle, applications of chemical equilibrium. Rate expression, order and molecularity of reactions, zero order, first order and pseudo first order reaction - half life period. Determination of rate constant and order of reaction. Temperature dependence of rate constant

Arrhenius equation and activation energy.

v. Electrochemistry

Theory of electrical conductance; metallic and electrolytic conductance. Faraday's laws - theory of strong electrolytes

Specific resistance, specific conductance, equivalent and molar conductance - Variation of conductance with dilution - Kohlrausch's Law - Ionic product of water, pH and pH - buffer solutions - use of pH values. Cells - Electrodes and electrode potentials - construction of cell and EMF values, Fuel cells, Corrosion and its prevention.

vi. Isomerism in Organic Compounds

Definition, Classification - structural isomerism, stereo isomerism - geometrical and optical isomerism. Optical activity- chirality - compounds containing chiral centres - R, S notation, D, L notation.

vii. Alcohols and Ethers

Nomenclature of alcohols - Classification of alcohols - distinction between 1^{o}, 2^{o}, and 3^{o} alcohols - General methods of preparation of primary alcohols, properties. Methods of preparation of dihydric alcohols: Glycol - Properties - Uses. Methods of preparation of trihydric alcohols - Properties

Uses. Aromatic alcohols - preparation and properties of phenols and benzyl alcohol.

Ethers - Nomenclature of ethers - general methods of preparation of aliphatic ethers - Properties - Uses. Aromatic ethers - Preparation of Anisole - Uses.

viii. Carbonyl Compounds

Nomenclature of carbonyl compounds - Comparison of aldehydes and ketones. General methods of preparation of aldehydes - Properties - Uses. Aromatic aldehydes - Preparation of benzaldehyde - Properties and Uses. Ketones

general methods of preparation of aliphatic ketones (acetone) - Properties - Uses. Aromatic ketones - preparation of acetophenone - Properties - Uses, preparation of benzophenone - Properties. Name reactions; Clemmenson reduction, Wolff - Kishner reduction, Cannizzaro reaction, Claisen Schmidt reaction, Benzoin Condensation, Aldol Condensation. Preparation and applications of Grignard reagents.

ix. Carboxylic Acids and their derivatives

Nomenclature - Preparation of aliphatic monocarboxylic acids - formic acid - Properties - Uses. Monohydroxy mono carboxylic acids; Lactic acid - Synthesis of lactic acid. Aliphatic dicarboxylic acids; Preparation of oxalic and succinic acids. Aromatic acids; Benzoic and Salicylic acids - Properties - Uses. Derivatives of carboxylic acids; acetyl chloride (CH_3COCl) - Preparation - Properties - Uses. Preparation of acetamide, Properties - acetic anhydride - Preparation, Properties. Preparation of esters - methyl acetate - Properties.

x. Organic Nitrogen Compounds and Biomolecules

Aliphatic Nitro compounds – Preparation of aliphatic nitroalkanes - Properties - Uses. Aromatic nitro compounds - Preparation - Properties - Uses. Distinction between aliphatic and aromatic nitro compounds. Amines; aliphatic amines

-General methods of preparation - Properties - Distinction between 1^{o}, 2^{o}, and 3^{o} amines. Aromatic amines - Synthesis of benzylamine - Properties, Aniline - Preparation - Properties

Uses. Differences between aliphatic and aromatic amines. Aliphatic nitriles - Preparation – properties - Uses. Diazonium salts – Preparation of benzene diazoniumchloride - Properties. **Carbohydrates –** Distinction between sugars and non sugars, structural formulae of glucose, fructose and sucrose, with their linkages, invert sugar –

definition, examples of oligo and polysaccharides

Amino acids – Classification with examples, Peptides- properties of peptide bond

Lipids - Definition, classification with examples, difference between fats, oils and waxes.

e. ENGLISH

Questions on English and it will be **Multiple Choice Questions** testing the comprehension of a short passage or line of poems, English grammer and pronunciation. Please note that the passages, lines of poems, dialogues, grammar and pronunciation items are chosen to suit the level of higher secondary or equivalent edcuation.

f. APTITUDE

1. Data Interpretation
2. Data Sufficiency
3. Syllogism
4. Number series, Coding and Decoding
5. Clocks, Calendars and Directions

APPENDIX – III

CERTIFICATE FOR NATIVITY

(For candidates hailing from Jammu and Kashmir and the North Eastern states)

Certified that Mr. / Ms. _____an

applicant for admission to B.Tech. Degree programme in the year _____, son / daughter

of Shri./Smt_____

residing at _____

in _____District of

State, is a native of _____State.

Signature of Tahsildar or Revenue Authority

Name :

Designation :

Place :

Date :

Office Seal

COMMUNITY CERTIFICATE (FOR SC / ST only)

Certified that Mr. / Ms. _____

an applicant for admission to B.Tech. Degree programme in the year _____, son / daughter of Shri. / Smt _____residing at _____

_____in _____

District of _____belongs to the _____

Caste / Tribe, _____

which is recognized as a Scheduled Caste / Scheduled Tribe under the Constitution (Scheduled Castes) Order 1950 /The Constitution (Scheduled Tribes) Order, 1950, as amended by the Scheduled Castes and Scheduled Tribes Orders Amendment Act, 1976.

Signature of Competent Authority

Name :

Designation :

Place :

Date :

OFFICE SEAL

Authorities empowered to issue Scheduled Caste / Scheduled Tribe Certificate

District Magistrate / Additional District Magistrate / Collector / Deputy Collector / Deputy Commissioner / 1st Class Stipendiary Magistrate / City Magistrate / Sub -Divisional Magistrate / Taluk Magistrate / Executive Magistrate / Extra Assistant Commissioner.

Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate

Revenue Officer not below the rank of Tahsildar Sub-Divisional Officer of the area where the candidate and / or his family normally resides.