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## 1. Introduction

VIT is emerging as a benchmark for continuous journey towards excellence, among the institutions of higher education in the field of technology in the country. Its values of equality, transparency and healthy collaboration have been ably guided by the leadership of its founder Dr. G. Viswanathan, renowned for his principled life devoted to public service.
The ubiquitous sense of joy and enthusiasm observed in the campus bears testimony to the positive learning and living experiences enjoyed by every student at VIT. Ours is a place where opportunities for learning as well as recreation are maximized and distractions are minimized.

VIT Students get to feel the taste of a boundary-less world through a heterogeneous mixture of students from across the globe, who have made VIT as their institution of choice.
VIT has long since been devoted to providing quality education in various Engineering disciplines of Science and Technology and of late it has proliferated into frontiers of Research as well. The Institute has a rigorous selection procedure to admit the 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.

## 2. B.Tech. Programmes offered at Vellore Campus

- Bioinformatics
- Bio-Medical Engineering
- Biotechnology
- Civil Engineering
- Computer Science and Engineering
- Electronics and Communication Engineering
- Electrical and Electronics Engineering
- Electronics and Instrumentation Engineering
- Information Technology
- Mechanical Engineering
- Mechanical ( Spec. in Energy Engineering )
- Mechanical ( Spec. in Chemical Process Engg. )
- Mechanical (Spec. in Automotive Engineering )


### 2.1 B.Tech. Programmes offered at Chennai Campus

- Civil Engineering
- Computer Science and Engineering
- Electronics and Communication Engineering
- Electrical and Electronics Engineering
- Mechanical Engineering


## 3. Eligibility

### 3.1. Nationality:

The applicant for admission should be a Resident / Non Resident Indian National.

### 3.2. Qualifying Examination:

Candidates appearing for the VITEEE-2011 should have either completed or shall be appearing in 2011, in any one of the following qualifying examinations:

- 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).
- Intermediate or Two-year Pre-University Examination conducted by a recognized Board/ University.
- High School Certificate Examination of the Cambridge University.

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

### 3.3. Eligibility Criteria in the Qualifying examination:

Candidates appearing for the VITEEE in 2011 should have secured an aggregate of $60 \%$ in Physics, Chemistry, Mathematics/Biology in the qualifying examination ( +2 / Intermediate).

The average marks obtained in the subjects Physics, Chemistry and Mathematics or Biology (PCM / PCB) in +2 (or its equivalent) put together should be $50 \%$ for the following categories:

- Candidates belonging to SC/ST

Fill in the proforma as given in Appendix-VII and have it attested by a competent authority (The list of authorities empowered for the same is given in Appendix-VII).

- Candidates hailing from Jammu and Kashmir and the North Eastern states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
Fill in the CERTIFICATE TO PROVE NATIVITY (proforma given in Appendix-VII).
These documents should be produced at the time of counselling, failing which they will not be considered for admission.

In case the marks 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.

- Candidates who have attempted Physics, Chemistry and Mathematics in the VITEEE are eligible for all the 13 B.Tech. Degree Programmes.
- Candidates who have attempted Physics, Chemistry and Biology in the VITEEE are eligible only for B.Tech. Bioinformatics, Bio-Medical Engineering and Biotechnology programmes.


### 3.4. Additional Information:

- It is the responsibility of the candidates to ascertain whether they possess the requisite qualifications for admission. Having been called for the written test/ counselling does not necessarily mean acceptance of the eligibility.
- The admission offered to a candidate who has been provisionally admitted to the B.Tech. programme will stand cancelled if he/she does not submit the original relevant documents (such as Marks statement, Transfer Certificate, Conduct Certificate etc) to the Admissions Officer at the time of admission.
- Admission to various programmes will however be subject to verification of facts from the original certificates/documents of the candidates. In case any discrepancy should arise, even at a later point of time after admission, the management reserves all right to cancel the candidate's admission and this decision shall be final.


### 3.5. Age Limit:

Candidates whose date of birth falls on or after 1st July 1989 are eligible to apply for VITEEE-2011. The date of birth as recorded in the High School / SSC / X Certificate will be considered authentic. Candidates should produce this certificate in original as a proof of their age at the time of counselling, failing which they will be disqualified.

## 4. Admission Procedure

- The admission will be purely on the basis of the marks/ ranks secured in the VITEEE-2011, conducted by VIT University.
- Candidates who have not appeared for the VITEEE are not eligible for admission.
- The candidates will be short-listed based on their entrance examination marks and will be called for the counselling


## 5. Schedule of VITEEE-2011

- VIT Engineering Entrance Examination will be held on 16 ${ }^{\text {th }}$ April 2011 (Saturday).
- The duration of the entrance examination will be 2 hours 30 minutes.
- Examination will be from 10.30 am to 1.00 p.m. [IST]


## 6. Pattern of the Entrance Examination

### 6.1. Question Paper:

The question paper will contain 4 [Four] parts as indicated below. All Questions will be of OBJECTIVE TYPE.

- PART-I - Physics
- PART-II - Chemistry
- PART-III - Mathematics
- PART-IV - Biology
- Physics, Chemistry and Mathematics candidates shall attempt PARTS - I, II \& III.
- Physics, Chemistry and Biology candidates shall attempt PARTS-I, II \& IV.
- Physics, Chemistry, Mathematics and Biology candidates can attempt either Part-I, II, III or Part-I, II, IV as per their choice.


## Candidates attempting Parts-I, II \& III are eligible for all the $\mathbf{1 3}$ programmes offered.

Candidates attempting Parts-I, II \& IV are eligible for Bioinformatics, Bio-Medical Engineering and Biotechnology programmes only.

- A candidate has to attempt any three parts only as indicated above. If any of the candidate attempt all the four parts, only the first three parts will be valued. The answered PART-IV will not be considered for valuation.

All the questions will be mostly from the State Board of Higher Secondary Education and the CBSE syllabus only. The syllabus for the Entrance Examination is given in APPENDIX-V of this Brochure.

- Each part has 40 questions and each question carries one mark.
- Each question is followed by 4 alternative answers. The candidate will have to choose the correct answer and shade against the appropriate choice in the OMR response sheet provided, strictly adhering to the instructions.
- NO negative marks for wrong answers.


### 6.2. Language of the Question Paper:

The Question paper will be only in English.

### 6.3. Use of Calculating Devices / phones / written /

 textual Material:Use of calculators, log tables and slide ruler; watches with facilities of calculator, pagers and cellular phones is strictly prohibited in the examination hall. Candidates are also strictly forbidden from carrying any textual material-printed or written, bits of paper, envelope or any other material into the examination hall except the Admit Card.

## 7. Important Instructions pertaining to VITEEE

- The examination room / hall will be opened 30 minutes before the commencement of the test. Candidates should take their seat immediately after the opening of the examination hall. If the candidates do not report on time, they are likely to miss the general instructions given in the Examination Hall.
- The Admit Card should be kept safely and brought to the examination. It should be produced on demand. A candidate who does not possess the Admit Card issued by the Institute shall not be permitted for the examination under any circumstances.
- Candidates will be permitted to enter the Examination Hall only on verification of their Admit Card
- The Registration Number (as given in the Admit Card) should be entered in the specified place in the response sheet.
- Candidates will not be permitted to enter the examination hall, after 11 a.m.
- Candidates will not be permitted to leave the examination hall before $12.30 \mathrm{p} . \mathrm{m}$.
- Each candidate will be allotted a seat indicating his or her Registration Number. The candidate should find out and occupy the allotted seat. If this is not done his / her candidature shall be cancelled.
- The test will start exactly at 10.30 a.m. and an announcement to this effect will be made by the invigilator.
- During the examination time, the invigilator will check the Admit Card to verify the identity of each candidate. The invigilator will also sign in the place provided in the Response sheet.
- Candidates should carefully go through and strictly adhere to all the instructions given in the OMR Response Sheet before they begin.
- The candidates should bring their own black ball-point pen of good quality. This will not be supplied by the University.
Candidates should shade the correct response against each question in the OMR response sheet only with a black ball-point pen.
- A signal will be given at the beginning of the examination and at half time.
- A signal will also be given before the closing time, when the candidate must stop marking the answers.
- The candidates should sign in the attendance sheet at appropriate places.
- The Admit Card should be preserved and produced for verification at the time of counselling / admission.
- Violation of any instruction and adoption of any unfair means in the examination hall will make the candidate ineligible for admission.


## 8. Application Forms

### 8.1. Issue of Application Forms:

The Application Forms will be issued from December $1^{\text {st }}$ week, 2010 to February 28, 2011.
The Prospectus and the information brochure for the B.Tech. programme-2011, along with the necessary enclosures which include the Application Form and a printed self-addressed envelope, can be obtained against cash payment of ₹ $750 /-$ from the various post offices as given in the VIT website: www.vit.ac.in
Candidates can obtain the application form in person from the VIT University at Vellore (or) VIT University at Chennai (or) from the Administrative Office, New No. 6, (Old No. W-73), Second Street (Opposite Towers Club), Anna Nagar, Chennai - 600040 (Phone: 044-42016555, 65480555, Fax: 044-26222555), by handing over a Demand Draft for ₹ 750/- drawn in favour of "VIT University", payable at Vellore.
Candidates can also obtain the application form through post by sending a Demand Draft for ₹ 750 /-drawn in favour of "VIT University", payable at Vellore, with a covering letter addressed to "Admissions Officer", VIT University, Vellore-632014, requesting for the application form and indicating their complete postal address. On receipt of the DD , the application form with the enclosures will be sent by post. The postal charges will be borne by the Institute. Candidates should write their name, Mobile Number and address on the reverse of the DD.

- Candidates can also apply online at www.vit.ac.in.

Candidates are advised to purchase the information brochure / application form only through means mentioned above and not from any private publishers / vendors. Fake application forms will not be processed and will be rejected.

### 8.2. Returning the Completed Application:

The application form duly completed should be checked 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. You are advised to go through the checklist available on the inside front cover of the brochure. Also ensure that you have adhered to the instructions for completing the computerized OMR application form (section-20 in the brochure) before mailing the application. The application should be refolded only along the original fold and inserted in the envelope provided.

Your application should be sent through either Registered Post / Speed Post in the self-addressed envelope provided by VIT so as to reach the office positively by February 28, 2011. Before despatching the application form ensure that you have filled in the correct Test City Code and tick the checklist on the envelope provided.

## Note:

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 the application fee, refunded in any case.

### 8.3. Receipt of Completed Application Form:

The last date for the receipt of completed application forms at VIT is February 28, 2011.

Any application received after this 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.

## 9. E-tracking through SMS / Internet

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 at VIT, a message will be sent by SMS to the 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 of only after about 2 weeks of despatch of their application.
Once the Admit Card is processed, this information will be sent to the candidates mentioning their registration number and the examination centre. This information can also be viewed through the website.
At the time of publication of the results, the rank will be intimated through SMS as well as it will be available in the website as mentioned in 12.2.

## 10. Test Cities for VITEEE-2011

The VITEEE - 2011 will be held in 106 cities. The list of Test Cities along with their corresponding codes is found in APPENDIX- IV of this information brochure.

Note: The centre of Examination once allotted to the candidate shall not be changed. Any request pertaining to this will not be entertained at any stage. While every effort will be made to allot a centre in the test city opted by the candidate, VIT University reserves the right to change or cancel any test centre at its discretion.

## 11. Admit Card

### 11.1. Important Information:

- The Admit card will be issued only to those eligible candidates who have submitted their application forms complete in all respects on or before the last date as specified in section 8.3.
- Admit cards will be despatched through speed post. Admit Cards will not be faxed or sent by e-mail.
- Candidates must not tamper with the Admit Card or alter any entry made therein after it has been authenticated.
- The Admit Card is not transferable to any other person. Impersonation is a legally punishable offence.
- The Admit Card will contain your name, regd. no. photograph, signature, address, address of your test centre, test schedule and a set of instructions for you to read carefully and prepare accordingly for the test.
- The Admit Card once received should be carefully examined by the candidate. Any discrepancy as such should immediately be brought to the notice of the Admissions Officer.
- No candidate will be permitted to write the test without a valid Admit Card. The Admit Card should be presented to the invigilators for verification.
- The Admit Card is an important document. It should be preserved and produced at the time of counselling and Admission.
11.2. Admit Card not received due to Application being incomplete:

In the case of an eligible candidate, whose application form is incomplete (For eg. Declaration not signed, no signature below the photograph, photograph not affixed on the application form, address not clearly written 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 doubly check that the application form is complete in all respects before posting.

### 11.3. Duplicate Admit card:

In case a candidate does not receive the Admit Card by $31^{\text {st }}$ of March 2011, he/she should make it a point to report the same immediately to the Admissions Officer and if he / she does not receive the Admit Card before the examination date, he / she would have to meet VIT Representative one day before the examination at the centre with a copy of the application form and two attested pass-port size photographs, identical to the one affixed in the application form. All enquiries pertaining to the Admit Card without mentioning application number will not be entertained under any circumstances.

## 12. Results

### 12.1. Rank List:

A merit list will be prepared based on the total marks secured in the VITEEE - 2011.

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 machine gradable sheets are graded and scrutinized with extreme care, there is no provision for re-grading and re-totalling. No photocopies of the answer sheets will be made available. No correspondence in this regard will be entertained.

### 12.2. Announcement of Results:

The entrance examination results will be available in the following websites:

- www.vit.ac.in
- www.schools9.com
- www.indiaresults.com
- www.minglebox.com
- www.shiksha.com
- www.globalinfowings.com


## 13. Scholarship under "GV School Development Programme" (GVSDP)

- Rank Holders of 1 to 50 in VITEEE will get $75 \%$ tuition fee waiver for all the years.
- Rank Holders of 51 to 100 in VITEEE will get $50 \%$ tuition fee waiver for all the years.


## 14. Special Fee Concession for Toppers of each State

The first rank holder as certified by the respective State in the qualifying examination from each State, in the event of being selected for the B. Tech degree programme will be offered a full tuition fee waiver for all the 4 years.

## 15. Tuition and Special Fees

## Mode Of Payment

All payments are to be made only in the form of a crossed Demand Draft drawn in favour of 'VIT University', payable at Vellore.

| Tuition Fees (per annum) | : ₹ 79,000 |
| :--- | :---: |
| Special Fees (Inclusive of Examination Fee, |  |
| library etc.) [per annum] | : ₹ 16,000 |
| Total Fees (per annum) | (after concession) |

* One time payment of Admission fee ₹ 10,000 and Caution deposit (refundable) ₹ 3,000 will be extra.


## 16. Counselling

### 16.1. Counselling procedure for allocation of Seats / Branch:

The counselling for allocation of branches to the short-listed candidates is based on their All India Ranks (AIR) in the VITEEE-2011. A candidate may obtain this information on our website or by calling the VIT office, on the day after the declaration of the results of VITEEE-2011.

The intimation regarding counselling dates will be displayed in VIT website and also SMS will be sent to the qualified candidates after declaration of results. Those Candidates who are attending the Counselling should fillup the student profile and submit the print out at the time of counselling. (Signed by both Candidate \& Parents) Common selection and Admission procedure will be followed through single window counselling at Vellore and Chennai campus for all the B.Tech programmes offered in both the campuses of VIT University.

To take care of possible absentees, the number of qualified candidates is kept more than the number of seats available in VIT University. The fact that a candidate has qualified in the VITEEE-2011 has been called for and the counselling does not guarantee admission to him / her. This will depend upon the candidates All India Rank (AIR) in the entrance examination and the availability of seats.
Details of various branches offered under the B.Tech. programme in the current year, the total number of seats allocated for each branch, the number of seats already allotted, number of seats still available will be displayed at the counselling centre for the benefit of candidates to make their choice. Based on the availability, the candidate will be allotted the branch.

VIT will in no way be responsible for counselling information not reaching the candidates. They should check the VIT website: www.vit.ac.in for information on counselling.
No change of date / time of counselling is permissible. If a candidate does not personally appear before the Admission Committee for counselling on the date specified, his/her seat shall be offered to the next candidate in order of merit.

However, due to unforeseen reasons, if a candidate is unable to attend the counselling on the specified date and time, he / she can attend on a subsequent time / date, after duly intimating the office, regarding this. But the candidate can only opt for the branch available at that time and cannot claim any other branch as per his / her original turn / seniority.
After the counselling for a particular day is over, the number of seats (branchwise) still available for allotment on the next day of counselling will be published in the website, and will also be displayed on the notice board of the Institute for the benefit of candidates.

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.

## Advance payment

The selected candidates will have to submit a DD for ₹ 30,000/- in favour of "VIT University", payable at Vellore, on confirmation of the seat, and acceptance of the branch allotted.

Candidate requiring hostel accommodation will have to submit a separate crossed Demand Draft for ₹ 20,000 drawn in favour of "VIT University", payable at Vellore and 4 nos. of recent passport size colour photos along with a hostel application form which is given at time of room counselling to the Chief Warden Office to confirm the hostel room.

## Submission of documents at the time of counselling

The candidates should produce the following documents in original along with one-set of photocopies while reporting for counselling. Candidates will not be allowed to participate in the counselling process without these documents.

- VITEEE-2011 Admit Card
- Class X Board Certificate as a proof of date of birth
- Marks Sheet of Qualifying Examination (if available)
- Community Certificate (For SC/ST only)
- Nativity Certificate (For candidates hailing from Jammu and Kashmir and the North Eastern states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura).
- DEMAND DRAFT for ₹ $30,000 /$ - drawn in favour of "VIT University", payable at Vellore.

Candidates without DD for the said amount, will not be permitted to attend counselling.

It is only after the verification of documents, candidates will be allowed to participate in the counselling process. Authentic records pertaining to identification, age, marks sheet of qualifying examination, community, nativity (if applicable) and other eligibility criteria as specified in section-3, will be checked. If a candidate fails to produce any of these documents, he/she will not be considered for admission.

A candidate should decide for certain on whether he / she should join the programme based on the branch allotted to him / her at the time of counselling before the payment of the fee.

Allotment of branch \& Campus once made is final and cannot be changed under any circumstances.

## 17. Payment of balance fee

The balance fee of ₹ $78,000 /-$ in the form of a DD drawn in favour of "VIT University", payable at Vellore along with a covering letter should reach the Admissions Officer on the date specified in the provisional admission card. The candidates should write their name, Rank and the branch allotted at the time of counselling on the reverse of the DD.

DD received after the due date (mentioned in the provisional admission card) will be not be entertained.

## 18. Submission of documents on Admission

The following documents in original are required to be submitted at the time of Admission:

- VITEEE-2011 Admit Card
- Qualifying examination mark statements of all attempts
- Transfer Certificate
- Migration Certificate (if issued by the board)
- Conduct Certificate
- Community Certificate (For SC/ST only)
- Nativity Certificate (For candidates hailing from Jammu and Kashmir and the North Eastern states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura).
- Provisional Admission Card. (photo copy)
- Recent Passport size colour photos - 4 nos.
- Undertaking for good conduct and behaviour in the prescribed form (Will be issued at the time of admission).
- Affidavit to be signed Separately by student $\&$ parent in ₹ 20/- Stamp Paper.
- 2 sets of photocopies of all original documents.

Students hailing from Andhra Pradesh Intermediate Board of Education should make it a point to submit their original marks statements (not marks Memorandam) at the time of admission.

All the above referred documents shall be handed over to the Admissions Office at the time of admission, failing which the provisional admission accorded will stand cancelled.

### 18.1. Submission of 'No Dues' Certificate

A candidate who desires to leave the University after joining the programme will have to submit a 'NO DUES' Certificate from his / her respective school to get back the certificates. This should be accompanied by the application for withdrawal and the original fee receipt and provisional admission card.

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

### 18.2. Refund of fees

The refund will be made as per the norms of the UGC.
Refund will be made only after submission of original fee receipt and the Provisional Admission Card and No Dues Certificate.

### 18.3. General Discipline

All candidates admitted to the Institute shall maintain good conduct, pay the requisite tuition fees and other charges by the due dates, attend their classes regularly and abide by the rules and regulations of the Institute. 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 University.
18.4. 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 for the time being in force.
Ragging juniors in any form is forbidden. If any one is found in ragging his/her juniors, he/she can be rusticated from the Institute.
It is mandatory that candidates and parents who are attending counselling have to sign an undertaking as the information given in (as per UGC Regulations-2009, www.ugc.ac.in) Annexure-I\&II in 20 rupees non-judicial bond paper.

## 19. Hostel - Vellore Campus

### 19.1. Hostel Accommodation:

Hostel accommodation will be provided only to those candidates whose residence is beyond 100 kms radius from the University Campus. Single room accommodation will not be available for first year undergraduate students.

### 19.2. Hostel Fees:

Establishment charges for various types of rooms in the campus are given for information. The Counselling for allocation of rooms will be after the seat counselling. The type of accommodation will be decided by the authorities concerned purely based on the availablity of rooms.
19.3. Mode of Payment:

Candidate requiring hostel accommodation will have to submit a separate crossed Demand Draft for ₹ 20,000 drawn in favour of "VIT University", payable at Vellore and 4 nos. of recent passport size colour photos along with a hostel application form which is given at time of room counselling to the Chief Warden Office to confirm the hostel room.

### 19.4. Reporting to the Hostel:

- Admission to the Hostel is only after payment of the prescribed tuition and hostel fees in full.
- Candidate will be allowed to join the hostel, two days before the date of commencement of the programme.
- Parent / Guardian along with candidate should submit an undertaking to the Hostel Office that the rules and regulations of the Hostel will be followed without any violation.
HOSTEL FEES DETAILS 2011-2012 - Vellore Campus

| Particulars | SINGLE BEDDED |  | DOUBLE BEDDED |  | THREE BEDDED |  | FOUR BEDDED |  | SIX BEDDED |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | A/C | Non A/C | A/C | Non A/C | A/C | Non A/C | A/C | Non A/C | A/C | Non A/C |
| Admission Fee (One Time Payment) | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |
| Establishment Charges | 32000 | 25000 | 21000 | 18000 | 18000 | 15000 | 14000 | 12000 | 12000 | 10000 |
| Electricity Charges <br> [Annual Advance] | 10000 | - | 10000 | - | 10000 | - | 8000 | - | 8000 | - |
| Caution Deposit [ Refundable ] | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |
| Mess Charges | Refer Table: 2 |  |  |  |  |  |  |  |  |  |
| Note: Additional Establishment charges of ₹ 2000/- will be applicable for K \& L Blocks in case of men and E \& F Blocks in case of Women |  |  |  |  |  |  |  |  |  |  |

Table: 2
Mess, EB \& Other Charges (Annual Advance)

| Mess | Type | Amount |
| :--- | :---: | :---: |
| South Indian | Veg | 32000 |
| South Indian | Non Veg | 35000 |
| North Indian | Veg | 35000 |
| North Indian | Non Veg | 38000 |
| Special Mess | Special | 41000 |

MODE OF PAYMENT:

* All payments are to be made in the form of crossed Demand Draft drawn in favour of "VIT University" and payable at Vellore.


### 19.5. Rules for Refund of Hostel Fees:

If a candidate, after paying the hostel fees, decides not to join the hostel, the amount after deducting the hostel admission fee will be refunded, for which the candidate has to submit a refund request to the Chief Warden.
If a candidate, after joining the hostel, wishes to vacate the hostel within one month, from the date of payment of hostel fees, he / she will be entitled only to a refund of $50 \%$ of the establishment charges and the mess charges after deducting the proportionate mess charges and the refundable caution deposit.
If a candidate vacates the hostel after one month from the date of paying the hostel fee, he / she will be entitled only to the refund of caution deposit and the mess charges after deducting the proportionate charges. The establishment charges and the hostel admission fee will not be refunded under any circumstances.

### 19.6. Submission of 'No Dues' Certificate:

A candidate who desires to leave the Hostel has to submit the "NO DUES" Certificate to get the eligible refund as per rules. This should be accompanied by the application for withdrawal and the original fee receipt.
The refund will be approved by the Chief Warden, only after submission of "NO DUES" certificate which can be obtained from the Hostel Office.

## 20. Instructions for completing the

 Computerised OMR Application Form- 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 APPLICATION FORM SHOULD BE SENT.
- Read the instructions carefully before filling in the application form. Requests for corrections will not be entertained later. Refer to the specimen copy enclosed in this brochure.
- Your application form will be Machine-processed. First, write in capital letters the required information or enter the relevant code with a black ball-point pen in the box(es) (wherever provided). Shade the alphabet/numeral/circle corresponding to the above using HB pencil only. What you write in the boxes is only for your guidance and for verification that you are shading the correct alphabet / numeral /option..
- If you wish to change a marking, erase the shaded spot completely and then shade the appropriate alphabet / numeral.
- Do not scribble, cut, tear or wrinkle the application form. Do not put any stray pencil marks anywhere on the application form.
- Do not write or make any marks on the Barcode.
- Your photograph, signature and address are to be machine-scanned. The machine recognizes only good quality images. You are therefore to paste a good quality colour photograph with light colour background taken not more than two months earlier, and write your address and signature in black ball-point pen only.
- Please note that your name, your parent's /guardian's 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 summarily be 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 future reference.


## Item-1-Name of the Candidate

Write your name in CAPITAL LETTERS exactly as it appears or would appear in your XII Std certificate. Write only a single letter in a box. Do not leave any blank box between the letters in a name. One box should be left blank between consecutive words of your name. If your name has several initials, leave one blank after each of them. Shade the corresponding alphabet underneath each letter of the name. Do not write Mr., Miss, Km. etc before your name.
Item-2-Date of Birth
Write the date, month and year of your birth as per the English calendar and as recorded in your School Board/+2/ Intermediate/ Pre-University examination certificate. Use numerals 01 to 31 for DATE, numerals 01 to 12 for MONTH, and the last two digits for the YEAR of birth. For example, if born on 1st MAY 1990, the date should be entered as follows: 010590 . Shade the corresponding numerals for date, month and year in each column.
Item-3-Gender
Item-4-Religion (For statistical purpose only)
Item-5-Nationality
Item-6-Community (For statistical purpose only)
Write the appropriate code in the box provided and then shade the appropriate circle to correspond with the code, in
all the above items. Candidates belonging to MBC category should use the same code as $\mathrm{OBC} / \mathrm{BC}$ (for statistical purpose only).
Item-7-Mother Tongue
Use the language codes as given below. Enter the correct code in the space provided and shade the numerals below to correspond with the code entered.

| Assamese | -01 | Kashmiri | -07 | Sindhi | -13 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Bengali | -02 | Malayalam | -08 | Tamil | -14 |
| English | -03 | Marathi | -09 | Telugu | -15 |
| Gujarati | -04 | Marwari | -10 | Urdu | -16 |
| Hindi | -05 | Oriya | -11 | Others | -17 |
| Kannada | -06 | Punjabi | -12 |  |  |

Item-8-Nativity State
Refer to the codes for various States given in APPENDIX-II of the Information Brochure and enter the appropriate code in the box provided. Shade the numerals below to correspond with the code entered. Please mention particular state candidates belongs to.

## Item-9-Choice of Campus

Write the appropriate code in the box provided and then shade the appropriate circle to correspond with the code.
Item-10-Blood Group
Write the appropriate code in the box provided and then shade the appropriate circle to correspond with the code.
Item-11-Complete Postal Address
Write the complete postal address to which any communication is to be sent. The address must include your name, $\mathrm{C} / \mathrm{O}$ name if required, and all other details including the correct PINCODE, for letters to reach you. Indicate your e-mail ID, Phone No. with the correct STD code and Mobile number, if any. Please note that this block will be machine scanned and therefore, it should be written very clearly in black ball-point pen only. In case you make any mistake, cover the entire box with an exact-sized white paper slip and write your address on it. Your address must not overflow this box.

The use of 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.

## Item-12-Photograph

Affix one recent good quality colour photograph in the space ear-marked for this in the Application Form. Paste a good quality colour photograph with light colour background
taken not more than two months earlier, indicating clearly your name and the date of taking the photograph. Do not wear a cap or goggles. Spectacles if being used regularly are allowed. Polaroid photos are not acceptable. The photograph should be firmly affixed to the application form with gum or fevicol. Before affixing write your Application No. and Name on the back side of your photograph. It should not be pinned or stapled.

- Candidates are advised to retain the negative of the same photograph for use at the time of Entrance Examination/ Counselling / Admission. Do not sign on the photograph. do not have it attested.
- It is expected that the candidate will have the same appearance at the time of the examination and counselling as in the photograph affixed in the application form. In case his/her appearance changes, he/she would be required to bring two new photographs at the time of the examination / counselling.


## NOTE: Photograph should not be larger than the space provided in the box for pasting it.



Item-13-Signature
Put your usual signature using a black ball-point pen, within the box provided. Your signature must not overflow or touch the border of the box. Your signature establishes your identity.
Item-14-Name of the Parent/Guardian
Write the name of one parent or guardian in capital letters. Write only a single letter in a box. Do not leave any blank box between the letters in a name. One box should be left blank between consecutive words of the name. If the name has several initials, leave one blank after each of them. Shade the corresponding alphabet underneath each letter of the name.

Side - 2


Item-15-Relationship of the person at item 14 with the Candidate

Indicate the relationship of the person whose name you have entered in item 14, to you, by putting in the correct code in the box provided and then shading the circle against the same.

Item-16-Parent/Guardian's Occupation
Shade the appropriate code in the box provided and then shade the appropriate circle to correspond with the code, in all the above items.

Item-17-Details of the Qualifying Exam passed / appearing for

Complete the tabular column furnishing relevant details asked under each clearly in black ball-point pen only.
In the second column of the table where you would be required to fill in your +2 Registration No. / Roll No; you may do so only if you have completed your +2 or have received the same for the current year.
In case you have not yet been allotted your Registration No./ Roll No., please leave that column blank.
Item-18-Where did you see our Admission Advertisment?

Please specify the Name of the Newspaper / Website (or) any other source where you have seen admission advertisement (write in CAPITAL LETTERS only)
Item-19-Medium of Instruction
Shade the appropriate code in the box provided and then shade the appropriate circle to correspond with the code.

## Item-20-Hostel Accommodation

Write the appropriate code in the box provided and then shade the appropriate circle to correspond with the code.

Item-21-XII Board
Refer to the codes for various School Education Boards given in APPENDIX-III of the Information Brochure and write the appropriate code in the box provided. Shade the corresponding numeral under each digit of the code.

Candidates who have studied in Regular, Full time and Formal Education are alone eligible to apply.
Item-22-Mode of Study
Write the appropriate code in the box provided and then shade the appropriate circle to correspond with the code.
Item-23-PINCODE
Write the PINCODE number in the space provided. Shade the corresponding numeral under each digit.

Item-24-Mobile Number
Write your mobile number in the space provided. Shade the corresponding numeral under each digit.
Item-25-Test City
Refer to the codes for Test Cities in APPENDIX-IV of the Information Brochure and write the appropriate code in the space provided. Shade the corresponding numeral under each digit of the code.

Item-26-Declaration
The candidate must sign the declaration. The place and date should also be written. The two signatures, the one below this declaration and the one below your photograph in the box (as in item 13) should be identical. Applications without signatures or with two different signatures at both places will be treated as incomplete and rejected.

The declaration by the candidate must be countersigned by the Parent/Guardian.
Item-27-Check List
Read the instructions from 1 to 3 and shade yes or no.

## 21. Special Programme

21.1. Integrated Master's Programmes
(Duration -5 years)
(1) B.Tech. with MBA Programme

Objective: This programme provides an opportunity to the students doing any branch of Engineering in our University to pursue simultaneously the Masters Degree in Business Administration.

This will enable the students to become trained Engineers proficient in Managerial skills also.
Duration: The programme is of five years (Ten Semesters) duration. For completion of this degree the student has to attend evening classes in addition to the regular classes from the third semester onwards.

Eligibility: All students pursuing B.Tech. in VIT. Willingness to put in extra effort and time.
Advantages: In five years they will have two professional qualifications in the form of UG degree in Engineering and Masters degree in Business Administration. Will have better job opportunities.

Candidates interested in joining the above Programme should contact the Director, Academics at the end of the II semester.

Course Fee: ₹ $25,000 /-$ per annum to be paid along with the normal tuition fees of the II, III \& IV year. In V year they have to pay ₹ $1,10,000 /$ - as tuition fee along with the special fee.

## 22 Check List

22.1. Documents to be submitted at the time of Counselling:

1. VITEEE-2011 Admit Card
2. Class X Board Certificate as a proof of date of birth
3. Marks Sheet of Qualifying Examination (if available)
4. Transfer Certificate
5. Migration Certificate (if issued by the Board)
6. Community Certificate (For SC/ST only )
7. Nativity Certificate (For candidates hailing from Jammu and Kashmir and the North Eastern states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura).
8. DEMAND DRAFT for ₹ $30,000 /$ - drawn in favour of "VIT University", payable at Vellore.
9. If you are seeking hostel admission bring DD for ₹ $20,000 /$ - drawn in favour of "VIT University", payable at Vellore.
22.2. Documents to be submitted at the time of Admission:

The following documents in original are required to be submitted at the time of Admission:

1. Qualifying examination mark statements of all attempts.
2. Transfer Certificate
3. Migration Certificate (if issued by the Board)
4. Conduct Certificate
5. Community Certificate (For SC/ST only )
6. Nativity Certificate (For candidates hailing from Jammu and Kashmir and the North Eastern states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura).
7. Provisional Admission Card
8. Recent Passport size colour photos - 4 nos.
9. Undertaking for good conduct and behavior in the prescribed form (Will be issued at the time of admission).
10. Affidavit has to be given by the Student and Parents separately as per Annexure - I \& II
11. 2 sets of photocopies of all original documents.

If you have any suggestions to improve our information brochure or application please e-mail to admission@vit.ac.in

## Appendix - I

## Hostel Chennai Campus

## Hostel Accommodation:

Hostel accommodation will be provided to those candidates based on availability of rooms on first come first served basis.

## Hostel Fees:

Establishment charges for various types of rooms in the campus are given below. The Counselling for allocation of rooms will be after the seat counselling. However, the type of accommodation will be decided by the authorities concerned purely based on the availablity of rooms.

## Mode of Payment:

Candidate requiring hostel accommodation will have to submit a separate crossed Demand Draft for ₹ 20,000 drawn in favour of "VIT University", payable at Vellore and 4 nos. of recent passport size colour photos along with a hostel application form which is given at time of room counselling to the Chief Warden Office to confirm the hostel room.

## Reporting to the Hostel:

- Admission to the Hostel will be given only after payment of the prescribed tuition and hostel fees in full.
- Candidate will be allowed to join the hostel, two days before the date of commencement of the programme.
- Parent / Guardian along with candidate should submit an undertaking to the Hostel Office that the rules and
regulations of the Hostel will be followed without any violation.


## Rules for Refund of Hostel Fees:

If a candidate, after paying the hostel fees, decides not to join the hostel, the amount after deducting the hostel admission fee will be refunded, for which the candidate has to submit a refund request to the Chief Warden.

If a candidate, after joining the hostel, wishes to vacate the hostel within one month, from the date of payment of hostel fees, he / she will be entitled only to a refund of $50 \%$ of the establishment charges and the mess charges after deducting the proportionate mess charges.

If a candidate vacates the hostel after one month from the date of paying the hostel fee, he / she will be entitled only to the refund of caution deposit and the mess charges after deducting the proportionate charges. The establishment charges and the hostel admission fee will not be refunded under any circumstances.
Submission of 'No Dues' Certificate:
A candidate who desires to leave the Hostel has to submit the "NO DUES" Certificate to get the eligible refund as per rules. This should be accompanied by the application for withdrawal and the original fee receipt.

The refund will be approved by the Chief Warden, only after submission of "NO DUES" certificate which can be obtained from the Hostel Office.

HOSTEL FEES DETAILS - 2011-2012 - Chennai Campus

| Particulars | DOUBLE BEDDED |  |  |  | THREE BEDDED |  |  |  | FOUR BEDDED |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | A/C |  | NON A/C | A/C |  | NON A/C | A/C |  | NON A/C |  |  |  |
|  | Veg | Non-Veg | Veg | Non-Veg | Veg | Non-Veg | Veg | Non-Veg | Veg | Non-Veg | Veg | Non-Veg |
| Admission Fees <br> (One time payment) | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |
| Establishment Charges | 25000 | 25000 | 22000 | 22000 | 22000 | 22000 | 19000 | 19000 | 18000 | 18000 | 16000 | 16000 |
| Mess \& Other Charges <br> (Annum) | 35000 | 40000 | 35000 | 40000 | 35000 | 40000 | 35000 | 40000 | 35000 | 40000 | 35000 | 40000 |
| Caution Deposit <br> (Refundable) | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |

## Special Mess ₹ 45000

For A/C Rooms - additional payment towards Electricity ₹ 20000/- is to be paid

## Appendix - II

Codes of The State / Union Territory

| State | Code |
| :---: | :---: |
| Andhra Pradesh | 10 |
| Arunachal Pradesh | 11 |
| Assam | 12 |
| Bihar | 13 |
| Chattisgarh | 14 |
| Delhi | 15 |
| Goa | 16 |
| Gujarat | 17 |
| Haryana | 18 |
| Himachal Pradesh | 19 |
| Jammu and Kashmir | 20 |
| Jharkhand | 21 |
| Karnataka | 22 |
| Kerala | 23 |
| Madhya Pradesh | 24 |
| Maharashtra | 25 |
| Manipur | 26 |
| Meghalaya | 27 |
| Mizoram | 28 |
| Nagaland | 29 |
| Orissa | 30 |
| Punjab | 31 |
| Rajasthan | 32 |
| Sikkim | 33 |
| Tamil Nadu | 34 |
| Tripura | 35 |
| Uttar Pradesh | 36 |
| Uttarakhand | 37 |
| West Bengal | 38 |
| Andaman and Nicobar Islands (UT) | 39 |
| Chandigarh (UT) | 40 |
| Dadra and Nagar Haveli (UT) | 41 |
| Daman and Diu (UT) | 42 |
| Lakshadweep (UT) | 43 |
| Puducherry (UT) | 44 |

## Appendix - III

Codes of The School Education Boards of Class XII

| State | Code |
| :---: | :---: |
| Andhra Pradesh Board of Intermediate Education | 01 |
| Assam Higher Secondary Education Council | 02 |
| Bihar Intermediate Education Council | 03 |
| Central Board of Secondary Education | 04 |
| Chattisgarh Madhyamik Shiksha Mandal | 05 |
| Council for the Indian School Certificate Examinations | 06 |
| Goa Board of Secondary and Higher Secondary Education | 07 |
| Gujarat Secondary Education Board | 08 |
| Haryana Board of Education | 09 |
| H P Board of School Education | 10 |
| J \& K State Board of School Education | 11 |
| Jharkhand Academy Council | 12 |
| Karnataka Board of Pre-University Education | 13 |
| Kerala Board of Public Examinations | 14 |
| Madhya Pradesh Board of Secondary Education | 15 |
| Maharashtra State Board of Secondary and Higher Secondary Education | 16 |
| Manipur Council of Higher Secondary Education | 17 |
| Meghalaya Board of Secondary Education | 18 |
| Mizoram Board of School Education | 19 |
| Nagaland Board of School Education | 20 |
| Orissa Council of Higher Secondary Education | 21 |
| Punjab School Education Board | 22 |
| Rajasthan Board of Secondary Education | 23 |
| Tamil Nadu Board of Higher Secondary Education | 24 |
| Tripura Board of Secondary Education | 25 |
| U.P. Board of High School \& Intermediate Education | 26 |
| Uttaranchal Shiksha Evam Pariksha Parishad | 27 |
| West Bengal Council of Higher Secondary Education | 28 |
| Others [ IB, Cambridge.......... ] | 29 |

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## Appendix - IV

## Codes of the Test Cities

VITEEE-2011 Test Cities

| Test City | Code | Test City | Code |
| :---: | :---: | :---: | :---: |
| ADILABAD | 101 | KOLKATA | 154 |
| AGARTALA | 102 | KOTA | 155 |
| AGRA | 103 | KOZHIKODE | 156 |
| AHMEDABAD | 104 | KUMBAKONAM | 157 |
| AIZWAL | 105 | KURNOOL | 158 |
| AJMER | 106 | KURUKSHETRA | 159 |
| ALIGARH | 107 | LUCKNOW | 160 |
| ALLAHABAD | 108 | LUDHIANA | 161 |
| AMRITSAR | 109 | MADURAI | 162 |
| ANANTAPUR | 110 | MANGALORE | 163 |
| ASANSOL | 111 | MEERUT | 164 |
| AURANGABAD[Mahrarashtra] | 112 | MORADABAD | 165 |
| BANGALORE | 113 | MUMBAI | 166 |
| BAREILLY | 114 | MUZZAFARPUR | 167 |
| BERHAMPUR | 115 | NAGPUR | 168 |
| BHAGALPUR | 116 | NASIK | 169 |
| BHATHINDA | 117 | NELLORE | 170 |
| BHILAI | 118 | NOIDA | 171 |
| BHOPAL | 119 | PANT NAGAR(Rudrapur) | 172 |
| BHUBANESWAR | 120 | PATNA | 173 |
| BIKANER | 121 | PORT BLAIR | 174 |
| BILASPUR | 122 | PUDHUCHERRY | 175 |
| BOKARO | 123 | PUNE | 176 |
| CHANDIGARH | 124 | RAEBARELI | 177 |
| CHENNAI | 125 | RAIPUR | 178 |
| COIMBATORE | 126 | RAJAMUNDRY | 179 |
| DEHRADUN | 127 | RAJKOT | 180 |
| DELHI | 128 | RANCHI | 181 |
| DHANBAD | 129 | RIYADH | 182 |
| DHARAMSALA | 130 | ROORKEE | 183 |
| DIBRUGARH | 131 | ROURKELA | 184 |
| DUBAI | 132 | SALEM | 185 |
| DURGAPUR | 133 | SAHARANPUR | 186 |
| GANGTOK | 134 | SHILLONG | 187 |
| GOA | 135 | SHIMLA | 188 |
| GORAKHPUR | 136 | SILCHAR | 189 |
| GURGAON | 137 | SILIGURI | 190 |
| GUWAHATI | 138 | SINGAPORE | 191 |
| GWALIOR | 139 | SURAT | 192 |
| HISSAR | 140 | THIRUVANANTHAPURAM | 193 |
| HUBLI | 141 | THRISSUR | 194 |
| HYDERABAD | 142 | THANE | 195 |
| INDORE | 143 | TIRUCHIRAPALLI | 196 |
| ITANAGAR | 144 | TIRUNELVELI | 197 |
| JABALPUR | 145 | TIRUPATI | 198 |
| JAIPUR | 146 | UDAIPUR | 199 |
| JALANDHAR | 147 | UJJAIN | 200 |
| JAMSHEDPUR | 148 | VADODARA | 201 |
| JAMMU | 149 | VARANASI | 202 |
| JHANSI | 150 | VELLORE | 203 |
| JODHPUR | 151 | VIJAYAWADA | 204 |
| KANPUR | 152 | VISAKHAPATNAM | 205 |
| KOCHI | 153 | WARANGAL | 206 |

# Appendix - V <br> VITEEE - 2011 Syllabus 

## Part - I - Physics

## Electrostatics

Frictional electricity, 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 fieldapplication of electric dipole in microwave oven.
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 to find field due to (i) infinitely long straight wire (ii) uniformly charged infinite plane sheet (iii) two parallel sheets and (iv) uniformly charged thin spherical shell (inside and outside)
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 - Lightning arrester - Van de Graaff generator.

## 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 - Superconductivity (elementary ideas) - Carbon resistors - colour code for carbon resistorscombination 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 - illustration by simple circuits - 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.

## 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 electic 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.

## 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.

## Electromagnetic Waves and Wave Optics

Electromagnetic waves and their characteristics Electromagnetic spectrum-radio, microwaves, infra-red, visible, ultra-violet, X rays, gamma rays.
Wavefront and Huygens's principle - Reflection, total internal reflection and refraction of plane wave at a plane surface using wavefronts.
Interference - Young's double slit experiment and expression for fringe width - coherent source - interference of lightFormation of colours in thin films - analytical treatment 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.

## Atomic Physics

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.

Bohr's model - energy quantization - energy and wave number expressions - Hydrogen spectrum - energy level diagrams - sodium and mercury spectra - excitation and ionization potentials - Sommerfeld's atom model.

Masers and Lasers - spontaneous and stimulated emissions - normal population and population inversion - Ruby laser - He-Ne laser - properties and applications of laser light holography.

## Dual Nature of Radiation and Matter

Photoelectric effect - Light waves and photons - Einstein's photoelectric equation - laws of photoelectric emission - particle nature of energy - experimental verification of Einstein's photoelectric equation - work function - photo cells and their application.

Matter waves - wave mechanical concept of the atom wave nature of particles - de Broglie relation - de Broglie wavelength of an electron - electron microscope.

## 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- $\alpha$-decay, $\beta$-decay and $\gamma$-decay - Radioactive decay law - half life - mean life - artificial radioactivity radio isotopes - effects and uses - Geiger - Muller counter.

Radio carbon dating - biological radiation hazards.
Nuclear fission - chain reaction - atom bomb - nuclear reactor - nuclear fusion - Hydrogen bomb- cosmic rays elementary particles.

## Semiconductor Devices and their Applications

Semiconductor theory - energy band in solids - difference between metals, insulators and semiconductors based on band theory- semiconductor doping - Intrinsic and Extrinsic semi conductors.

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 - seven segment display - LCD.

Junction transistors - characteristics - transistor as a switch - transistor as an amplifier - transistor biasing - RC, LC coupled and transformer coupling in amplifiers - feed back in amplifiers - positive and negative feedback - advantages of negative feedback in amplifiers - oscillator - condition for oscillations - LC circuit - Colpitt oscillator.

Logic gates - NOT, OR, AND, EXOR using discrete components - NAND and NOR gates as universal gates Laws and theorems of Boolean algebra.

## Part - II - Chemistry

## 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 spectrum, absorption spectrum, line spectra and band spectra; Hydrogen spectrum - Lyman, Balmer, Poschen, Bracket 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,d orbitals.

## p, d and f-Block Elements

p block elements - Phosphorous compounds; $\mathrm{PCl}_{3}, \mathrm{PCl}_{5}$ 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, properties of $\mathrm{CuSO}_{4} \mathrm{AgNO}_{3}$ and $\mathrm{K}_{2} \mathrm{Cr}_{2} \mathrm{O}_{7}$
Lanthanides-Introduction, electronic configuration, general characteristics, oxidation state - lanthanide contraction, uses, brief comparison of Lanthanides and Actinides. Nuclear energy

## 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 compounds (Hemoglobin 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).

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 reaction - half life period. Determination of rate constant and order of reaction - Temperature dependence of rate constant - Arrhenius equation, activation energy.

## 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 - Kohlraush's law - Ionic product of water, $\mathrm{p}^{\mathrm{H}}$ and $\mathrm{p}^{\mathrm{OH}}$ buffer solutions - use of pH values. Cells - Electrodes and electrode potentials - construction of cell, EMF values, Fuel cells, Corrosion and its prevention (Basics only).

## 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.

## Alcohols and Ethers

Nomenclature of alcohols - Classification of alcohols distinction between $1^{0}, 2^{0}$ and $3^{0}$ 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.

## 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, cannizaro reaction, Claisen Schmidt reaction, Benzoin Condensation, aldol Condensation. Preparation and applications of Grignard reagents.

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 acid. Aromatic acids; Benzoic and Salicylic acid - Properties - uses. Derivatives of carboxylic acids; acetyl chloride $\left(\mathrm{CH}_{3} \mathrm{COCl}\right)$ - Preparation - Properties - Uses. Preparation of acetamide, Properties - acetic anhydride - preparation, Properties. Preparation of esters - methyl acetate - Properties.

## Organic Nitrogen Compounds

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 $1^{0}, 2^{0}$ and $3^{0}$ amines. Aromatic amines Synthesis of benzylamine - Properties, Aniline - Preparation - Properties - Uses. Distinction between aliphatic and aromatic amines. Aliphatic nitriles - Preparation properties - Uses. Diazonium salts - Preparation of benzene diazoniumchloride - Properties.

## Biomolecules

Carbohydrates - distinction between sugars and non sugars, structural and formulae of glucose, fructose and sucrose, with their linkages, invert sugar - definition and examples of polysaccharides, amino acids, peptides

## Part - III - Mathematics

## Applications of Matrices and Determinants

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.

## Complex Numbers

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 - $\mathrm{n}^{\text {th }}$ roots, cube roots, fourth roots.

## 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 ( $\mathrm{X}_{1}$, $\mathrm{Y}_{1}$ ) to all the above said curves.
Asymptotes, Rectangular hyperbola - Standard equation of a rectangular hyperbola.

## Vector Algebra

Scalar Product - Angle between two vectors, properties of scalar product, applications of dot products. 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.

## 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 NonCollinear points, Passing through the line of intersection of two given planes, The distance between a point and a Plane, the plane which contains two given line (co-planar 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.

## Differential Calculus

Derivative as a rate Measurer - Rate of change, Velocity, Acceleration, Related Rates, Derivative as a measure of Slope, Tangent, Normal and angle between Curves, Maxima and Minima.

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.

Integral Calculus and its Applications
Simple definite Integrals - Fundamental Theorems of Calculus, Properties of Definite Integrals.
Reduction formulae - Reduction formulae for $\int \sin ^{n} x d x$ and $\int \cos ^{n} x d x$, Bernoulli's formula.
Area of Bounded Regions, Length of the Curve.
Differential Equations
Differential Equations - Formation of differential equations, order and degree, solving differential equations ( $1^{\text {st }}$ order), variable separable homogeneous, linear equations.
Second order linear Differential Equations - Second order Linear Differential Equations with constant co-efficients, Finding the Particular Integral if $f(x)=e^{m x}, \sin m x, \cos m x$, $\mathrm{x}, \mathrm{x}^{2}$.

## 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.

## Discrete Mathematics

Mathematical Logic - Logical statements, Connectives, Truth Tables, Logical Equivalence, Tautology, Contradiction.
Groups - Binary Operations, Semigroups, Monoids, Groups, Order of a Group, Order of an Element., Properties of Groups.

## Part - IV - Biology

## Taxonomy

Linnaean system of Classification and Binomial Nomenclature; History and types of classification; Status of Bacteria and Viruses; Classification of angiosperms up to sub-class level (Bentham and Hooker' system); Salient features of Non-Chordates up to phylum level and chordates up to class levels

## Evolution

Modern concepts of Organic Evolution, Evidences of Organic Evolution (Fossil records and Biochemical Evidences). Darwinism and Neo - Darwinism, Lamarckism,

Neo - Lamarckism, sources of variation, Mutation, Recombination, Genetic Drift, Migration, natural Selection. Origin and concepts of Species: Speciation and Isolation (Geographical Pre-Mating and Post-Mating or Post Zygotic), Adaptive Radiations.

## Cell and Molecular Biology

Discovery of Cell, Cell as a contained unit - Pro and Eukaryotic cells and its Ultra Structure. Cell division: Amitosis, Mitosis and Meiosis. The Cell: Cell Wall, Cell Membrance and Cell Organelles (Plastids, Mitochondria, Endoplasmic Reticulum, Golgi Bodies, Ribosomes, Lysosomes, Vacuoles, and Centrioles)
DNA and RNA, DNA as Genetic Material, Replication, Transcription, Genetic Code, Translation, Gene Expression and Regulation.

## Reproduction and Genetics

Reproduction in Organisms: Asexual and Sexual Reproduction, Sexual Reproduction in Flowering Plants, Structure of Flowers, Pollination, Fertilization, Development of seeds and fruits, Apomixes, and Poly - Embryony.
Human Reproduction: Reproductive system in Male and Female, Menstrual Cycles, Production of Gametes, Fertilization, Implantation, Embryo Development, Pregnancy, Parturition and Lactation.
Chromosomes: Structure and Types, Genes and Genomes, Linkage and Crossing over, Recombination of Chromosomes, Mutation, Chromosomal Aberration, mendelian Inheritance, Chromosomal Theory of Inheritance, Deviation from Mendelian Ratio (Gene Interaction, Incomplete Dominance, Co-Dominance, Complimentary Gene, Multiple Allelism), Chromosomal Disorders in Humans.

## Microbiology and Immunology

Introduction and history of Medical Microbiology, The Influence of Pasture, Pathogens and Parasites, Viruses, Bacteria and Protozoa: Structure and Diseases caused by them. Microbes in Households, Food Processing, Industrial Production, Savage Treatment, Waste management and Energy Generation. Basic concepts of Immunology: Innate and Humoral Immunity, Lymphoid Organs, Lymph Nodes and Spleen, Antibodies, Transplantation Immunology, Immune System Disorders.

## Physiology: Plant and Human

Plant Physiology: Movement of water, Food, Nutrients, Gases and Minerals. Respiration, Photosynthesis (Light and Dark Reactions), Factors affecting Photosynthesis, Electron Transport Chain (ETC), Glycolysis, Kreb's Cycle. Pentose Phosphate pathway, Hormones and Growth Regulators, Photo-Periodism and Vernalization.

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.

## Biotechnology and Its Applications

Recombinant DNA Technology, Applications in Health, Agriculture and Industries; Genetically Modified Organisms; Bio-Safety Issues, Insulin and Bt Cotton, Transgenic Plants and microbes, Plant Tissue Culture and Its Application, Protoplasmic Fusions, Single Cell Proteins.

## Biodiversity, Ecology and Environment:

Ecosystems: Components, Types and Energy flow in Ecosystem; Species, Population and Community, Ecological Adaptations, Centers of Diversity and Conservation of BioDiversity, Botanical Gardens, National Parks, Sanctuaries and Museums, Environmental Issues, Human Population Explosion, Green House Effects, Ozone Layer Depletion, Government and Non-Government Agencies Handling Environmental Issues: Poverty and Freshwater Crisis and Management.
Applied Biology and Human Welfare
Bio-Pesticides, Genetically Modified Foods, Bio-Wars, Bio-Piracy, Sustainable Agriculture and Medicinal Plants, Economic Importance of food Yielding (Rice) Oil Yielding (Groundnuts), Fiber Yielding (Cotton) and Timber Yielding (Teak) Plants.

Population and Birth Control, Contraception and MTP, Sexually Transmitted Diseases, Infertility, Cancer and AIDS. Adolescence and Drug or Alcohol Abuse.

## Advanced Biology

Plant and Human Genome Projects, DNA Fingerprinting and its Applications, Bioinformatics and its Applications, DNA Sequencing and Protein Structure and Biological Databases.

## APPENDIX - VI

## SAMPLE QUESTIONS

PART - I - Physics

1) A Parallel-plate capacitor of plate area $0.2 \mathrm{~m}^{2}$ and plate spacing 1 cm is charges to 1000 V and is then disconnected from the battery. How much work is required if the plates are pulled apart to double the plate spacing? $\left(\mathrm{e}_{0}=8.9 \times 10^{-12} \mathrm{C}^{2} / \mathrm{N} . \mathrm{m}^{2}\right)$
A) $8.9 \times 10^{-5} \mathrm{~J}$
B) $4.8 \times 10^{-7} \mathrm{~J}$
C) $5.9 \times 10^{-8} \mathrm{~J}$
D) $9.5 \times 10^{-8} \mathrm{~J}$
2) An AC generator consists of eight turns of wire, each having area $A-0.009 \mathrm{~m}^{2}$, with a total resistance of 12 . The loop rotates in a magnetic field of 0.5 T at a constant freqency of 60 Hz . The maximum induced emf is
A) 134 V
B) 127 V
C) 136 V
D) 143 V
3) A uniform cylindrical coil in vacuum has $r_{1}=1 \mathrm{~m}, l_{1}=1 \mathrm{~m}$ and 100 turns, coaxial and at the centre of this coil is a smaller coil of $\mathrm{r}_{2}=10 \mathrm{~cm}, \mathrm{l}_{2}=10 \mathrm{~cm}$ and 10 turns. The mutual inductance of the two coils are
A) 25.2
B) 39.5
C) 44.2
D) 33.2
4) The mutual induction between two coils when a current of 2 A changes to 6 A in 2 second and induces an emf of 20 mV in a secondary coil is
A) 1 mH
B) 2 mH
C) 10 mH
D) 20 mH
5) When a hydrogen atom makes a transition from $n=3$ to $n=2$ state the wavelength emitted for the first Balmer line is
A) 658 nm
B) 840 nm
C) 706 nm
D) 690 nm
6) Energy gap of a certain p-n junction is found to be 3 eV . What is the wavelength of light emitted by this LED when connected to a battery? (Planck's constant, $\mathrm{h}=4.14 \times 10^{-15} \mathrm{eV}$ and speed of light in vacuum, $\mathrm{c}=3 \times 10^{8} \mathrm{~m} / \mathrm{s}$ )
A) 828 nm
B) 414 nm
C) 207 nm
D) 1242 nm
7) An infinitely long solenoid of radius 2 cm is uniformly wound with 1 mm diameter copper wire in a single layer. If the current carried by the wire is 0.5 A , the magnetic field along the axis is approximately.
A) 500 T
B) $6 \times 10^{-7} \mathrm{~T}$
C) $6 \times 10^{-4} \mathrm{~T}$
D) 1 T
8) An electron with energy $\mathrm{E}_{0}$ has a wavelength. If the energy is doubled to $2 \mathrm{E}_{0}$, the wavelength will be
A) $2 \lambda_{\text {o }}$
B) $\sqrt{ } 2 \lambda_{0}$
C) $\lambda_{0} / \sqrt{ } 2$
D) $\lambda_{0} / 2$
9) A screen is separated from a double slit source by 1.20 m . The distance between the two slits is 0.030 mm . The second order bright fringe $(\mathrm{m}=2)$ is measured to be 4.5 cm from the centerline. The wavelength of the light
A) 593 nm
B) 690 nm
C) 563 nm
D) 840 nm
10) Consider an electron of kinetic energy $E$ and a photon of the same energy. Let the de Broglie wavelength of the electron be $\lambda_{\text {electron }}$ and the wavelength of the photon be $\lambda_{\text {photon }}$. Then the ratio $\lambda_{\text {electron }} / \lambda_{\text {photon }}$ is proportional to
A) $\mathrm{E}^{-2}$
B) $\mathrm{E}^{2}$
C) $\mathrm{E}^{-1 / 2}$
D) $\mathrm{E}^{1 / 2}$
11) A Compound formed by element $A$ and $B$, crystallizes in the cubic structure. When atoms of $A$ are at the corners of the cube and $B$ atoms are at the face centres, the formula of the compound is
A) AB
B) $A B_{3}$
C) $\mathrm{A}_{3} \mathrm{~B}$
D) $\mathrm{AB}_{2}$
12) $\Lambda \mathrm{o}_{\mathrm{m}}$ for $\mathrm{CaCl}_{2}$ is [ given $\lambda^{\circ} \mathrm{Ca}^{2+}=119.0 \lambda^{\circ} \mathrm{Cl}^{-}=76.3$ ]
A) $271.6 \mathrm{~S} \mathrm{~cm}^{2} \mathrm{~mol}^{-1}$
B) $195 \mathrm{~cm}^{2}$
C) $295 \mathrm{~cm}^{2}$
D) $195.3 \mathrm{cn}^{2} \mathrm{~mol}^{-1}$
13) The molar conductance at infinite dilution at $18^{\circ} \mathrm{C}$ for KF is $129.21 \mathrm{~S} \mathrm{~m}^{2} \mathrm{~mol}^{-1}$. What is the molar conductance of Naf under similar condition?
A) $152.63 \mathrm{~S} \mathrm{~m}^{2} \mathrm{~mol}^{-1}$
B) $\quad 105.79 \mathrm{~S} \mathrm{~m}^{2} \mathrm{~mol}^{-1}$
C) $\quad 149.86 \mathrm{~S} \mathrm{~m}^{2} \mathrm{~mol}^{-1}$
D) $121.55 \mathrm{~S} \mathrm{~m}^{2} \mathrm{~mol}^{-1}$
14) Acetophenone and benzophenone can be distinguished from one another by
A) Iodoform test
B) Tollen's reagent
C) 2, 4-Dinitrophenylhydrazine test
D) Dye test
15) Anisole reacts with a mixture of conc. sulphuric acid and nitric acid to yield
A) both ortho and para nitro anisole
B) para nitro anisole
C) ortho nitro anisle
D) meta nitro anisole and ortho anisole
16) $\mathrm{C}_{6} \mathrm{H}_{5} \mathrm{No}_{2}+6[\mathrm{H}] \quad$ ? $\mathrm{C}_{6} \mathrm{H}_{5} \mathrm{NH}_{2}+2 \mathrm{H}_{2} \mathrm{O}$
A) $\mathrm{Sn} / \mathrm{HCl}$
B) $\mathrm{ZnCl}_{2} / \mathrm{Hcl}$
C) $\mathrm{CuCl} / \mathrm{HCl}$
D) $\mathrm{CuCl}_{2} / \mathrm{HCl}$
17) One mole of an ideal gas expands isothermally and reversibly from $0.02 \mathrm{~m}^{3}$ to $0.2 \mathrm{~m}^{3}$ at 300 K . The entropy change of the system is (Data: $\mathrm{R}=8.3 \mathrm{~J} \mathrm{~K}^{-1} \mathrm{~mol}^{-1}$ )
A) zero $\mathrm{JK}^{-1}$
B) $83 \mathrm{~J} \mathrm{~K}^{-1}$
C) $19.1 \mathrm{~J} \mathrm{~K}^{-1}$
D) $8.3 \mathrm{~J} \mathrm{~K}^{-1}$
18) The correct set of four quantum numbers for the outermost electron of Rubidium ( $z=37$ ) is
A) $5,0,0,-1 / 2$
B) $6,0,0,+1 / 2$
C) $5,1,1,+1 / 2$
D) $5,1,0,+1 / 2$
19) The reaction $\mathrm{A} \rightarrow \mathrm{B}$ follows first order kinetics. The time taken for 0.8 mole of A to produce 0.6 mole of B is 1 hour. What is the time taken for conversion of 0.9 mole of A to produce 0.675 mole of B ?
A) 0.5 hour
B) 0.25 hour
C) 1 hour
D) 2 hours
20) Diethyl ether on reaction with Chlorine in the presence of light gives
A) $\alpha$-Chloroether
B) perchloro diethyl ether
C) $\alpha, \alpha^{1}$-dichlorodiethyl ether
D) $\alpha$-Chlorodiethyl ether
21) The magnitude of vectors $\bar{a}, \bar{b}, \bar{c}$ are respectively 1,1 and 2 . If $\bar{a} x(\bar{a} x \bar{c})+\bar{b}=0$, then the acute angle between $\bar{a}$ and $\bar{c}$ is
A) $\frac{\pi}{6}$
B) $\frac{\pi}{4}$
C) $\frac{\pi}{3}$
D) $\frac{\pi}{2}$
22) The line $a x+b y+c=0$ will be normal to $x y=1$ if
A) $a>0, b>0$
B) $a$ and $b$ are of opposite signs
C) $a<0, b<0$
D) $\mathrm{a}=0, \mathrm{~b}=0$
23) A tetrahedron has vertices at $O(0,0,0), A(1,2,1), B(2,1,3)$ and $C(-1,1,2)$ then the angle between the faces $O A B$ and ABC will be
A) $\cos ^{-1}\left(\frac{19}{35}\right)$
B) $\cos ^{-1}\left(\frac{17}{31}\right)$
C) $30^{\circ}$
D) $90^{\circ}$
24) Let Z16 denote the set of non-negative integers modulo 16. The order of the element 6 (under multiplication) is
A) 7
B) 4
C) 3
D) 5
25) The argument of the complex number $(1+i)^{4}$ is
A) $135^{\circ}$
B) $180^{\circ}$
C) $45^{\circ}$
D) $90^{\circ}$
26) The region in the Argand plane defined by $|z-2 i|+|z+2 i|<5$ is the interior of the ellipse with major axis along
A) the real axis
B) $y=-x$
C) $y=x$
D) the imaginary axis
27) The point (a, 2a) is an interior point of the region bounded by parabola $y^{2}=16 x$ and the double ordinate through the focus. Then a belongs to the interval
A) $a<4$
B) $a>4$
C) $0<a<2$
D) $0<a<4$
28) If the foci of the ellipse $\frac{x^{2}}{16}+\frac{y^{2}}{b^{2}}=1$ and the hyperbola $\frac{x^{2}}{144}-\frac{y^{2}}{81}=\frac{1}{25}$ coincide, then the value of $\mathrm{b}^{2}$ is
A) 1
B) 5
C) 7
D) 9
29) The value of $\int_{0}^{\frac{\pi}{2}}(\cos x)^{\sin x}\left(\cos x-\sec x+\log (\cos x)^{\cos x}\right) d x$ is
$\begin{array}{ll}\text { A) } 1 & \text { B) } \frac{\pi}{2}\end{array}$
B) $\frac{\pi}{2}$
C) 0
D) -1
30) If the function $f(x)=4 x^{5}+3 x^{3}+2 x^{2}+e^{x / 7}$ and $g(x)=f^{-1}(x)$, then the value of $g^{\prime}(1)$ is
A) 7
B) 0
C) 1
D) $1 / 7$
PART - IV - Biology
31) Regulation of gene expression is controlled by the binding of enhancer/repressor to
A) Promoter
B) Prinbnow box
C) TATA box
D) Operator
32) Type of chloroplast seen in Oedogonium
A) Reticulate
B) Spiral
C) Stellate
D) Cup shaped
33) Which of the following feature cannot differentiate between chordates and non-chordates?
A) Notochord
B) Dorsal nerve cord
C) Pharyngeal gill slits
D) Body cavity or coelom
34) Source of energy for Urey-Miller experiment was
A) glycine
B) UV
C) Electric spark
D) ATP
35) Which malarial parasite has the longest incubation period?
A) Plasmodium ovale
B) Plasmodium falciparum
C) Plasmodium vivax
D) Plasmodium malariae
36) Genes present in the cytoplasm of eukaryotic cells are found in
A) Mitochondrial \& inherited via egg cytoplasm
B) Lysosomes and peroxisomes
C) Golgi bodies and smooth endoplasmic reticulum
D) Plastids and inherited via male gametes
37) Mitochondrial DNA is present in
A) cytoplasm
B) matrix
C) inner membrane
D) cristae
38) Pasteurization of milk in LTLT method is
A) $72^{\circ} \mathrm{C}$ for 15 sec
B) $36^{\circ} \mathrm{C}$ for 30 min
C) $63^{\circ} \mathrm{C}$ for 30 min
D) $89^{\circ} \mathrm{C}$ for 1 sec
39) If $\mathrm{MG}^{2+}$ ions are absent in plants, what will be the primary symptom?
A) the leaves degenerates
B) the leaf colour disappears
C) the leaf veins degenerates
D) the leaves roles inside
40) Which of the following is the most common property of cancer \& HIV?
A) uncontrolled cell proliferation
B) contagious
C) can be acquired by any age group
D) escaping of detection by immune system

APPENDIX - VII
CERTIFICATE TO PROVE NATIVITY
(For candidates hailing from Jammu and Kashmir and the North Eastern states of
Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura)
Certified that Mr. / Ms. $\qquad$ an applicant for admission to B.Tech. Degree programme in the year $\qquad$ , son / daughter of
$\qquad$
$\qquad$ residing
at $\qquad$
$\qquad$ in $\qquad$ District of $\qquad$ State, is a native of
$\qquad$ State.
Signature of Tahsildar or Revenue Authority
Name :
Designation :
Place :
Date :

## Office Seal

## THE FORM OF CASTE CERTIFICATE FOR SC / ST

Certified that Mr. / Ms.
applicant for admission to B.Tech. Degree programme in the year $\qquad$ , son / daughter of Shri. / Smt $\qquad$ residing at $\qquad$ in $\qquad$
District of $\qquad$ belongs to the $\qquad$
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 / $1^{\text {st }}$ 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

ANNEXURE I

## AFFIDAVIT BY THE STUDENT

## (This matter has to be typed on a nonjudicial stamp paper of ₹ 20 )

I, $\qquad$ (full name of student with admission/registration/enrolment number) s/o d/o Mr./Mrs./Ms. $\qquad$ , having been admitted to $\qquad$ (name of the institution), have received a copy of the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, (hereinafter called the "Regulations") carefully read and fully understood the provisions contained in the said Regulations.
2) I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
3) I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against me in case I am found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
4) I hereby solemnly aver and undertake that
a) I will not indulge in any behaviour or act that may be constituted as ragging under clause 3 of the Regulations.
b) I will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulations.
5) I hereby affirm that, if found guilty of ragging, I am liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against me under any penal law or any law for the time being in force.
6) I hereby declare that I have not been expelled or debarred from admission in any institution on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, I am aware that my admission is liable to be cancelled.

Declared this $\qquad$ day of $\qquad$ month of $\qquad$ year.

Signature of deponent
Name:

## VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at $\qquad$ (place) on this the $\qquad$ (day), of $\qquad$ (month), $\qquad$ (year).

Signature of deponent
Solemnly affirmed and signed in my presence on this the $\qquad$ (day) of $\qquad$ (month), $\qquad$ (year) after reading the contents of this affidavit.

## ANNEXURE II

## AFFIDAVIT BY PARENT/GUARDIAN

## (This matter has to be typed on a nonjudicial stamp paper of ₹ 20)

I, Mr./Mrs./Ms. $\qquad$ (full
name of parent/guardian) father/mother/guardian of, $\qquad$ (full name of student with admission/registration/enrolment number), having been admitted to $\qquad$
$\qquad$ (name of the institution), have received a copy of the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, (hereinafter called the "Regulations"), carefully read and fully understood the provisions contained in the said Regulations.
2) I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
3) I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against my ward in case he/she is found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
4) I hereby solemnly aver and undertake that
a) My ward will not indulge in any behaviour or act that may be constituted as ragging under clause 3 of the Regulations.
b) My ward will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulations.
5) I hereby affirm that, if found guilty of ragging, my ward is liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against my ward under any penal law or any law for the time being in force.
6) I hereby declare that my ward has not been expelled or debarred from admission in any institution on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, the admission of my ward is liable to be cancelled.

Declared this $\qquad$ day of $\qquad$ month of $\qquad$ year.

Signature of deponent
Name:
Address:
Telephone/ Mobile No.:

## VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at $\qquad$ (place) on this the $\qquad$ (day), of $\qquad$ (month), $\qquad$ (year) .
Solemnly affirmed and signed in my presence on this the ____(day), of ____(month), ___ (year )
after reading the contents of this affidavit.

## Last date for the receipt of completed application forms at VIT <br> Monday <br> February 28, 2011

## VIT Engineering Entrance Examination (VITEEE-2011) <br> Saturday <br> April 16, 2011

## Declaration of Results (Tentative) <br> Friday <br> May 06, 2011

Commencement of Classes (Tentative) - Vellore Campus

- School of Computing Sciences and Engineering (SCSE) (B.Tech. - CSE)
- School of Electronics Engineering (SENSE) (B.Tech. - ECE)
- School of Electrical Engineering (SELECT)
(B.Tech. - EEE, EIE)
- School of Bio Sciences and Technology (SBST)
(B.Tech. - Bioinformatics, Bio-Medical, Biotechnology)
- School of Information Technology and Engineering (SITE)
(B.Tech. - IT)
- School of Mechanical and Building Sciences (SMBS)
(B.Tech. - Civil, Mechanical and Mechanical (spec. in Energy Engineering)

Mechanical (spec. in Chemical Process Engineering)
Mechanical (spec. in Automotive Engineering)

## For Admission details contact:

Admissions Officer
VIT University
Vellore - 632 014, Tamil Nadu.
Phone: +91-416-2202247, 2202168, 2202157, 2202125
Fax: +91-416 224 5544, 2245766
Email: admission@vit.ac.in
Website: www.vit.ac.in

For Hostel details contact:<br>Chief Warden<br>VIT University<br>Vellore - 632 014, Tamil Nadu.<br>Email:chiefwarden@vit.ac.in<br>Mens Hostel: +91-416-220 2028, 2202528<br>Fax: +91-416 2244705<br>Ladies Hostel: +91-416-220 2710<br>Fax: +91-416 4207074


[^0]:    * Candidates who have studied in regular, full time and formal education are alone eligible to apply.

