

# JEE-2011

Joint Entrance Examination

Organizing Institute  
Indian Institute of Technology Kanpur

INFORMATION  
BROCHURE



## IMPORTANT NOTES

Candidates for JEE-2011 have options to apply either On-line or Off-line.

- The fee for On-line application is Rs 450/- for SC/ST/PD/Female candidates and Rs 900/- for all other candidates. For On-line submission, visit JEE websites (**APPENDIX-7**, inside of back cover).
- For Off-line application, please ensure that you are using the correct form; (1) Form priced Rs. 500/- (in light yellow envelope) for SC/ST/PD/Female candidates, and (2) Form priced Rs. 1000/- (in white envelope) for all other candidates.
- The fee for candidates opting for Dubai centre (light pink envelope) is US\$ 200.

Please go through the following general information for the filling and submission of Off-line application form.

1. Ensure that you fulfill all eligibility criteria given in **Section III**.
2. **Submit only one application form**. If you submit more than one, your application for JEE-2011 may be rejected.
3. A machine will process the optical machine readable (OMR) application form by picking up only the dark pencil marks. Therefore, darken the bubbles corresponding to the letters or numerals using **HB** pencil only. Please go through **Section VII** for details.
4. Options once selected in the application form cannot be changed at a later stage.
5. Note down the application form number (printed near the barcode on the OMR sheet) and quote this number in all your future correspondence.
6. Choose two cities in the **same zone** (see **APPENDIX-3**), where you wish to write JEE-2011.
7. Completed application form with all enclosures must be sent to the Chairman, JEE-2011 of the zone to which the cities of your choice belong by **Registered Post / Speed Post only**. For further details see **Section VIII**. All future correspondence should be addressed to this zonal IIT.
8. No acknowledgement card will be sent. However, you may check the status of your application through SMS and on the JEE website/IVRS of your **zonal IIT**.
9. Your application must be complete in all respects. Incomplete application forms or application forms filled in a language other than English will be summarily rejected.
10. The application fee is non-refundable.

For all enquiries, candidates may use the website or the phone with IVRS facility of the **zonal IIT**. The required website addresses and phone numbers with IVRS facility are given in **APPENDIX-7** (inside of back cover).

**Note:** The Courts at Allahabad alone shall have the jurisdiction to settle and decide all matters and disputes related to JEE-2011 as IIT Kanpur is the Organizing Institute.

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## I. INTRODUCTION

The Indian Institutes of Technology (popularly known as IITs) are institutions of national importance established through an Act of Parliament for fostering excellence in education. There are fifteen IITs at present, located in Bhubaneswar, Chennai, Delhi, Gandhinagar, Guwahati, Hyderabad, Indore, Jodhpur, Kanpur, Kharagpur, Mandi, Mumbai, Patna, Ropar and Roorkee. Over the years IITs have created world class educational platforms dynamically sustained through internationally recognized research based on excellent infrastructural facilities. The faculty and alumni of IITs continue making huge impact in all sectors of society, both in India and abroad. Institute of Technology, Banaras Hindu University (IT-BHU) Varanasi and Indian School of Mines (ISM) Dhanbad, are the oldest institutions in India and are known for their immense contributions towards society at large and for science and technology in particular.

The primary objectives behind such institutions are to:

- Build a solid foundation of scientific and technical knowledge and thus to prepare competent and motivated engineers and scientists
- Create environment for freedom of thought, cultivate vision, encourage growth, develop personality and self-discipline for pursuit of excellence
- Kindle entrepreneurial streak

All of the above help to prepare the students admitted to these institutions for successful professional and social lives. Today, alumni of these institutions occupy key positions in industry and academia in India and abroad.

Each institute has well-equipped modern laboratories, state-of-the-art computer network and well stocked technical library. Teaching methods rely on direct personal contact between the teachers and the students and the use of traditional and modern instructional techniques. Students live in a pleasant and intellectually stimulating environment with people having similar goals and aspirations, which is an exciting and unique experience.

These institutions offer courses leading to Bachelor's degree in a number of engineering,

technological and scientific disciplines. M.Sc. Integrated courses in pure and applied sciences and M.Tech. Integrated courses in a few disciplines are also offered by some of these Institutions. In addition, some IITs offer Dual-Degree M.Tech. programmes, wherein both B.Tech. and M.Tech. degrees are awarded.

Credit-based academic programmes offer flexibility to students to progress at their own pace. A minimum level of performance is necessary for satisfactory progress. The medium of instruction is English.

The admissions to the Undergraduate Programmes at these institutions for all Indian and Foreign nationals are made through the Joint Entrance Examination (JEE).

## II. ABOUT JEE-2011

The details of the pattern and the dates of examination, eligibility criterion and how to apply are outlined below:

### 1. Schedule of JEE-2011

The examination will be held on Sunday, April 10, 2011 as per the schedule given below:

**Paper 1** : 9:00 to 12:00 hrs. (IST)

**Paper 2** : 14:00 to 17:00 hrs. (IST)

The schedule will remain unaltered even if the above date is declared a public holiday.

### 2. Type of Examination

There will be two question papers, each of three hours duration. Both the question papers will consist of three separate sections on Chemistry, Physics and Mathematics. They will be of objective type, designed to test comprehension, reasoning and analytical ability of candidates.

The answers for each of the questions are to be recorded on a separate, specially designed, machine-gradable sheet of paper (ORS – Optical Response Sheet). While answering each of the questions the candidate is expected to darken the bubble(s) against correct answer(s) using hard black (HB) pencils only. In some sections, incorrect answers may be awarded negative marks.

The detailed syllabi based on which JEE-2011 will be conducted, for the three subjects, namely,

Chemistry, Physics and Mathematics, are given in **APPENDIX-1**.

### 3. Choice of Language of Question Papers

A candidate can opt for question papers either in English or in Hindi. This option should be exercised while filling the application form. It cannot be changed at any later stage.

### 4. Choice of Font of Question Papers

Candidates with poor vision can ask for question papers with **enlarged font**. They must send a request letter addressed to the Chairman, JEE of the respective zone along with the application form. The format of the letter is given in **APPENDIX-2**.

### 5. Cities/Towns of JEE-2011 Centres

JEE-2011 will be conducted in major cities and towns of India as well as in Dubai. The list is given in **APPENDIX-3**. While applying, candidates should choose any two **towns/cities in the same zone**. All correspondence should be addressed to this zonal IIT.

Efforts will be made to allot candidate's first or second choice. However, in some exceptional circumstances, a different city in the same zone may be allotted.

Request for a change of centre within a city will not be entertained. However, under exceptional circumstances, a change of city within the zone or outside the zone may be permitted with a request letter. The letter should clearly indicate the Registration Number with valid reasons for the change and should be received on or before March 28, 2011 along with a draft of Rs. 500/- (Rs. 250/- for SC/ST/PD/Female candidates) drawn in favour of "Chairman, JEE-2011" of the zonal IIT. The application should be sent to the IIT from where the candidate received the admit card. In this regard, the decision of the Chairman, JEE-2011 will be final.

### 6. Use of calculating and communication aids

Use of electronic devices like mobile phone, calculator, iPod, etc. is **NOT PERMITTED** in JEE-2011. Materials like log table, book, notebook, etc. should not be brought into the examination hall.

## III. ELIGIBILITY FOR JEE-2011

Candidates must make sure that they satisfy all the eligibility conditions given below for appearing in JEE-2011:

### 1. Date of birth

For GE and OBC categories, only those candidates whose date of birth falls on or after October 1, 1986 are eligible to appear in JEE-2011. SC, ST, and PD candidates who are born on or after October 1, 1981 are eligible to appear in JEE-2011.

The date of birth as recorded in the high school/first Board/Pre-University certificate will be accepted. If the certificate does not mention the date of birth, a candidate must submit, an authenticated document indicating the date of birth.

### 2. Year of passing Qualifying Examination (QE)

A candidate must have passed the QE for the first time, on or after October 1, 2009 or will be appearing in 2011.

Those who are going to appear in the QE later than October 1, 2011 are not eligible to apply for JEE-2011.

The qualifying examinations (QEs) are listed below:

- i) The final examination of the 10+2 system, conducted by any recognized central / state Board, such as Central Board of Secondary Education, New Delhi; Council for the Indian School Certificate Examinations, New Delhi; etc.
- ii) Intermediate or two-year Pre-University examination conducted by a recognized Board / University.
- iii) Final examination of the two-year course of the Joint Services Wing of the National Defence Academy.
- iv) General Certificate Education (GCE) examination (London / Cambridge / Sri Lanka) at the Advanced (A) level.
- v) High School Certificate Examination of the Cambridge University or International Baccalaureate Diploma of the International Baccalaureate Office, Geneva.
- vi) Any Public School/Board/University examination in India or in any foreign country recognized as equivalent to the 10+2 system by the Association of Indian Universities (AIU).
- vii) H.S.C. vocational examination.

- viii) Senior Secondary School Examination conducted by the National Institute of Open Schooling with a minimum of five subjects.
- ix) At least 3 year Diploma recognized by AICTE or a state Board of technical education.

In case the relevant qualifying examination is not a public examination, the candidate must have passed at least one public (Board or Pre-University) examination at an earlier level.

### 3. Minimum percentage of marks in QE

Candidates belonging to GE and OBC categories must secure at least 60% marks in aggregate in their QE. SC, ST and PD candidates must secure at least 55% marks in aggregate in their QE.

The percentage of marks awarded by the Board will be treated as final. If the Board does not award the percentage of marks, it will be calculated based on the marks obtained in all subjects listed in the mark sheet. If any Board awards only letter grades without providing an equivalent percentage of marks on the grade sheet, the candidate should obtain a certificate from the Board specifying the equivalent marks, and submit it at the time of counselling / admission. In case such a certificate is not provided then the final decision rests with the Joint Implementation Committee of JEE-2011.

### 4. Important Points to Note

- i) One can attempt JEE only twice, in *consecutive* years. That means one should have attempted JEE for the first time in 2010 or will be appearing in 2011.
- ii) Those who have taken admission (irrespective of whether or not they continued in any of the programmes) or accepted the admission by paying the registration fee at any of the IITs, IT-BHU Varanasi or ISM Dhanbad, are **NOT ELIGIBLE** to write JEE-2011.
- iii) The year of passing the qualifying examination will be determined based on the examination he/she passed the earliest out of the qualifying examinations listed in **Section III(2)**. If the candidate attempted any of the qualifying examinations listed in **Section III(2)** more than once, then the year of the first successful attempt will be used to determine the eligibility to write JEE-2011.
- iv) The offer of admission is subject to verification of original certificates/ documents

at the time of admission. If any candidate is found ineligible at a later date even after admission to an Institute, his/her admission will be cancelled automatically.

- v) If a candidate is expecting the results of the QE in 2011, his/her admission will only be provisional until he/she submits the relevant documents. The admission stands cancelled if the documents are not submitted in original to the concerned institute before September 30, 2011.
- vi) If a candidate has passed any of the examinations, listed in **Section III(2)**, before October 1, 2009, she/he is not eligible to appear in JEE-2011.
- vii) If a Board invariably declares the results of the QE late (only after September 30, every year), the candidate is advised to attempt JEE in 2012 or later.
- viii) The decision of the Joint Admission Board of JEE-2011 regarding the eligibility of any applicant shall be final.

### IV. RESERVATION OF SEATS

As per Government of India rules candidates belonging to certain categories are admitted to seats reserved for them based on relaxed criteria. These categories are:

- Scheduled Castes (SC),
- Scheduled Tribes (ST),
- Other Backward Classes (OBC) if they belong to Non-Creamy Layer (NCL),
- Persons with Physical Disability (PD)

Benefit of reservation shall be given only to those castes/tribes which are recognized by the Government of India and are included in the respective central list published by the Department of Personnel and Training.

#### 1. SC/ST candidates

For the SC and ST categories, 15% and 7.5% seats, respectively, are reserved in all IITs, IT-BHU Varanasi and ISM Dhanbad. Candidates belonging to these categories are qualified on the basis of a relaxed criterion.

Candidates belonging to SC/ST categories will be required to produce the original caste/ tribe certificate issued by a competent authority in the

prescribed format (**APPENDIX-4**). Certificates in any other format will not be accepted. These documents must be produced at the time of counselling, failing which they will **NOT** be considered for admission. Seats remaining vacant in these categories shall not be filled by candidates belonging to any other category.

## 2. OBC candidates

For the purpose of reservation of seats in JEE-2011, a candidate will be considered as OBC only if he/she belongs to the non-creamy layer of this category. Those belonging to the creamy layer of OBC are not entitled for reservation.

For candidates belonging to OBC (non-creamy layer), 27% of the seats are reserved in all IITs, IT-BHU Varanasi and ISM Dhanbad, and are allotted based on a relaxed criterion.

In case any of the reserved seats in this category are not filled, they can be filled by candidates belonging to GE category.

The OBC candidates (non-creamy layer) will be required to produce the original caste certificate issued on or after January 1, 2011 by a competent authority in the prescribed format (**APPENDIX-5**). Certificates in any other format will not be accepted. The certificate must be produced at the time of counselling, failing which they will NOT be considered for admission in the OBC category.

## 3. Persons with Disability (PD)

For PD, including leprosy-cured candidates, who are otherwise fit to pursue the course, and qualify JEE with relaxed norms relevant to this category, 3% seats are reserved in each of the categories (namely, GE, OBC, SC, & ST) as specified by the Government of India.

For any category of disability (viz., locomotor, visual, dyslexia, speech, and/or hearing) benefit would be given to those who have at least 40% physical impairment.

The candidates in this category will be required to be certified by a medical board constituted by IITs during counselling. The decision of medical board is final.

## 4. Preparatory Course

For SC/ST/PD candidates, in case all the reserved seats are not filled, a limited number of candidates are admitted to a Preparatory Course of one-year duration on the basis of a further relaxation provided (i) if the seats reserved for the respective category are vacant, (ii) candidates satisfy

minimum norms, and (iii) candidates have not registered for the Preparatory Course earlier. This course attempts to prepare the students in Chemistry, Physics and Mathematics. On successful completion of the course, the students will be offered a direct admission to the undergraduate programmes in July 2012, against the unfilled reserved seats for JEE-2011.

## V. PREFERENTIAL ALLOTMENT OF SEATS FOR DS SUBCATEGORY

Two seats are available for preferential allotment in each institute for children of defence/paramilitary personnel killed or permanently disabled in action during war or peace-time operations (DS subcategory).

Such candidates should submit a copy of the relevant certificate issued by a competent authority in the Directorate of Resettlement and Rehabilitation, New Delhi under the Ministry of Defence, Govt. of India or in the Ministry of Home Affairs, Govt. of India, as applicable, along with the application. To avail this preferential allotment, he/she must obtain rank in the Common Merit List (see **Section X(2)**) and should produce the original certificate at the time of counselling.

## VI. HOW TO APPLY FOR JEE-2011

Candidates are advised to read the eligibility criteria (**Section III**) carefully. A candidate can apply for JEE-2011 either 'On-line' or 'Off-line'.

### 1. Applying On-line

Candidates can apply On-line, if they have access to computer, laser printer and Internet at home or elsewhere, by logging on to JEE websites. The site has been designed in a 'user friendly' way to help candidate to apply On-line in a step-by-step fashion. On-line application portal will be open from 8:00 hrs. (IST) on November 1, 2010 to 17:00 hrs. (IST) on December 15, 2010.

The fee for On-line application for SC/ST/PD/Female candidates is Rs 450/- and Rs 900/- for all other candidates. Candidates can make payment through challans of designated banks or National Electronic Fund Transfer (NEFT). For candidates opting for a centre outside India (i.e., Dubai), the fee for on-line application is US\$ 200, which can be paid through credit/debit cards of major banks.

### 2. Instructions for applying On-line

- Log-on to IIT-JEE Website.



- Follow the instructions given on the IIT websites carefully for filling On-line application form.
- The printed application form signed by the candidate and parent / guardian along with the necessary certificates and the photograph in the prescribed format should reach the JEE office of the respective IITs (address on back cover) on or before 17:00 hrs. (IST) on December 20, 2010.
- No acknowledgement will be given for applications. However, you can verify your application status by logging-in with your user-ID and Password after a week. If you see any discrepancy, call us or email us using the details given in the web site/back cover of this brochure.

### 3. Applying Off-line

Sale of Off-line OMR application form and Information Brochure will start from 10:00 hrs. (IST) on November 12, 2010 and close at 17:00 hrs. (IST) on December 15, 2010. The application material can be obtained from any of the designated bank branches in each zone.

Please ensure that you are using the correct form; (1) Form priced Rs. 500/- (in light yellow envelope) for SC/ST/PD/ Female candidates, and (2) Form priced Rs. 1000/- (in white envelope) for all other candidates. For candidates opting for a centre outside India (i.e., Dubai), the application fee is US\$ 200 (light pink envelope).

### 4. Instructions for applying Off-line

- Read carefully the eligibility criteria (**Section III**).
- Fill-in the OMR application form as per the guidelines given in **Section VII**.
- Follow the procedure given in **Section VIII** for completing the application process.

### VII. DETAILED INSTRUCTIONS FOR FILLING OMR APPLICATION FORM

- The application form is in Optical Machine Readable (OMR) format. That means a special machine reads only the dark bubbles that you make on the OMR sheet.
- Therefore do not scribble, smudge, cut, tear, or wrinkle the application form. Do not put any

stray pencil marks anywhere on the application form. **Do not write or place any mark over the barcodes.**

iii) *To guide you to fill the form correctly, we suggest the following:*

- Take a photocopy of both sides of the blank OMR sheet and try to fill them. After making sure that the entries in this form are correct, you can start filling-in the original OMR and bubble the corresponding entries in the sheet, so that you may avoid errors while filling it. You should only send the filled original OMR form and NOT this photocopy form to us.
- While filling the OMR form, first enter the data in black ballpoint pen (avoid gel/ink/felt pen as it might smudge the form) in the boxes provided above each coding area and then bubble with HB pencil the corresponding letter or numeral in each column below each box for the machine to read.
- A sample filled OMR application form is given in **APPENDIX-6** for showing how the application form appears after bubbling correctly. **If there is a discrepancy between the written data and the bubbled data in your application, the bubbled data will be taken as final.**

- If, by mistake you darkened a wrong bubble and wish to change it, erase the darkened bubble completely using a pencil eraser, and then darken the correct bubble. Do not use any whitener to erase a darkened bubble.
- Your application must be complete in all respects. You should fill all the fields. Incomplete applications and applications filled in a language other than English will be summarily rejected.

Step-by-step instructions to fill the OMR application form are given below:

#### S.No. 1: Name of the candidate

Write your name in capital letters as given in your 10<sup>th</sup> class certificate or equivalent. Write each single letter in each of the boxes one by one. Leave only one blank box between consecutive words of your name. Do not use any dots in between initials. If your name has several initials, leave one blank after each of them. Darken the appropriate alphabet bubble underneath each letter of your name. If your name requires more than 34 boxes, darken the bubble marked '+' in the 35<sup>th</sup> column of the top first row.

### S.No. 2: Category

The codes for different categories are as follows.

Category	Code
General	GE
Scheduled Caste	SC
Scheduled Tribe	ST
Other Backward Classes (Non-Creamy Layer)	OBC (NCL)
Other Backward Classes (Creamy Layer)	OBC (CL)

Write your category code with ballpoint pen in the space (box) provided. Darken the appropriate bubble against the category you belong to.

### S.No. 3: Gender

Darken the appropriate bubble.

### S.No. 4: Nationality

If you are an Indian citizen then darken the bubble against "INDIAN".

If you hold a foreign passport or hold either Person of Indian Origin (PIO) or Overseas Citizen of India (OCI) status then darken the bubble against "FOREIGN".

### S.No. 5: Year of passing QE (10+2 or equivalent) and required minimum marks

If you are appearing for 10+2 or an equivalent qualifying examination for the **first time** in 2011, you should darken the bubble corresponding to "APPEARING IN 2011". You need not darken any other bubble below, in this item.

If you have passed 10+2 or an equivalent qualifying examination for the **first time** as defined in **Section III (4 (iii))** on or after October 1, 2009 you should darken the bubble corresponding to "PASSED ON OR AFTER 1<sup>st</sup> Oct 2009".

If you have passed 10+2 or an equivalent qualifying examination for the **first time** as defined in **Section III (4 (iii))** earlier than October 1, 2009 you should darken the bubble corresponding to "PASSED EARLIER THAN 1<sup>st</sup> Oct 2009".

In the above examination, depending on whether you have obtained the minimum required marks (60% for GE/OBC or 55% for SC/ST/PD), darken the corresponding bubble.

### S.No. 6: Earlier attempts at JEE

If you are writing JEE for the first time darken the bubble corresponding to "NONE". Otherwise, darken the appropriate bubble corresponding to the year of your earlier attempt at JEE.

### S.No. 7: Subcategory

If you are physically disabled (refer **Section IV(3)**), then darken the bubble against PD; if you belong to the DS category (refer **Section V**), then darken the bubble marked DS; else bubble "NONE".

### S.No. 8: Requirement of Question Papers with Enlarged Font

If you are a candidate with poor eye-sight and unable to read question paper printed in normal size font even with corrective spectacles/lenses and require question papers with enlarged font, then darken the bubble corresponding to 'YES'. You must send a request letter, in the format given in **APPENDIX-2**, along with the application form.

### S.No. 9: Date of birth

Enter the date, month, and year of your birth as per the English calendar and as recorded in your 10<sup>th</sup> class or equivalent certificate. Use numerals 01 to 31 for DATE, 01 to 12 (corresponding to January - December) for MONTH, and the last two digits of the YEAR of birth (the digits '19' are already there). For example, if you were born on 6<sup>th</sup> March 1993, then the date should be entered as follows: "**06 03 93**". Darken the appropriate bubbles for the date, month, and year in each column.

### S.No. 10: Year of passing 10<sup>th</sup> class

Write the year of passing your 10<sup>th</sup> Class or equivalent examination and darken the bubbles corresponding to the appropriate numerals.

### S.No. 11: Choice of examination cities

**APPENDIX-3** gives the list of the cities/towns and their corresponding codes where the examination centres are located. Select two different city codes both from the **same zone**. Your first preference must be entered under CHOICE-I and the second under CHOICE-II. Then darken the bubble corresponding to the appropriate numeral (code) in each column. The candidate **MUST** fill both the city choices (except when opting for Dubai), else a city at random from the same zone will be assigned for the unfilled city choice.

### S.No. 12: Counselling Centre

Only candidates belonging to SC, ST, OBC, PD or DS category or holding a foreign passport, who have received their admit cards from IIT Roorkee or IIT Kharagpur, may opt for IT-BHU Varanasi or ISM Dhanbad, respectively, as their counseling centre. In this case, the candidate should darken the appropriate bubble.

If you belong to GE category, then the counselling will be On-line and hence you need not darken any bubble.

Counselling for the rest of the candidates will take place in the corresponding zonal IIT that has issued your admit card and there is no need to darken any bubble.

### S.No. 13: Question paper language

During the examination, question papers can be provided in either English or Hindi, according to the candidate's choice. If you wish to obtain the question paper in Hindi darken the bubble corresponding to "HINDI" otherwise darken the bubble against "ENGLISH". This choice, once exercised, cannot be changed at any later stage.

If no option is exercised, only question papers in English language will be provided.

### S.No. 14: Candidate's name and complete mailing address

Write the complete postal address to which any communication is to be sent from December 2010 to July 2011. The address must include your name, phone number, c/o name (if required), and other details, including the PINCODE. Indicate mobile number/land-line number with the STD code, and e-mail address. Please note that this block will be machine scanned, and, therefore, it should be written very clearly in CAPITAL LETTERS using a **black ballpoint pen** only. E-mail address may contain small letters. Your address must not overflow this box. **Please do NOT give the address of your school / college or any other institute here.**

### S.No. 15: Photograph

Your recent colour photograph should be taken with white background, preferably wearing dark-coloured clothes. **The approximate size of the photograph should be 3.5 cm x 4.5 cm (taken not earlier than two months).** Your face should cover about 75 % of the photo. Please **write your name and application number** on the reverse

side of the photograph. This will help matching your photograph with your application form in case it gets detached from the form during processing. Paste the photograph (**use good quality gum, not glue stick or stapler**) in the box provided. Do not sign on the photograph and do not get it attested. Keep two more copies of the photograph with you for future use.

### S.No. 16: Signature of the candidate

Put your usual **signature in black ballpoint pen** within the box provided. Your signature must not overflow or touch the border of the box provided. Your signature establishes your identity. **Hence, do not merely write your name in capital letters. This may lead to rejection of your application.**

### S.No. 17: Name of one parent/guardian

Write the name of your father/mother or guardian as mentioned in your 10<sup>th</sup> class or equivalent certificate. Write the name of your father/mother or guardian, even if no such name is mentioned in the 10<sup>th</sup> class certificate. Write a single letter in each box. Leave only one blank box between consecutive words of the name. Do not write dots after initials; leave a blank box. Even if the name has several initials, leave one blank after each of them. Darken the bubble corresponding to the appropriate letter underneath each letter of the name. If the name of the parent/guardian requires more than 34 boxes, darken the bubble marked '+' in the 35<sup>th</sup> column of the first row.

### S.No. 18: Place of 10<sup>th</sup> class schooling

Darken the appropriate bubble.

### S.No. 19: Type of preparation

If you are preparing for JEE-2011 on your own, darken the bubble against "SELF", else, darken "OTHER". This information is used only for post-examination statistics.

### S.No. 20: Board of qualifying exam

Darken the appropriate bubble.

### S.No. 21: Cell number/phone number with STD code

Write the cell number or land-line number with STD code in the box provided through which you can be contacted or a message can be sent to you. Darken the bubbles corresponding to the appropriate numerals below the cell/phone number.

### S.No. 22: Mother tongue

Choose and write the code corresponding to your mother tongue from the table below. Darken the appropriate bubbles for the code.

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

### S.No. 23: Pincode of permanent place of residence

Write the PINCODE of your permanent place of residence in the space provided. Darken the bubble corresponding to the appropriate numeral underneath each digit.

### S.No. 24: Occupation of parent/guardian

Darken the appropriate bubble corresponding to occupation/service.

### S.No. 25: Parents' educational background

Darken the appropriate bubble.

### S.No. 26: Total annual income of parents/guardian

The annual income should be as on March 31, 2010. In case both parents are employed, the combined annual income is to be indicated. Darken the appropriate bubble.

### S.No. 27: Declaration by the candidate

The candidate must sign the declaration. The place and date should also be entered. The two signatures, the one below this declaration and the other in the box below your photograph (**S.No. 16**), should be identical. Applications without signatures or with dissimilar signatures at the two places will be treated as **incomplete and rejected**. The declaration by the candidate must be countersigned by parent/guardian. Write the name of parent/guardian in the space provided.

## VIII. OTHER INFORMATION RELATED TO OMR APPLICATION FORM

You must take a photo copy of this filled-in form duly signed with photograph, etc., and keep it

safely with you till the admission procedure is complete. You must also make a note of your application number separately. You have to quote your application number in all future correspondence.

### 1. The check-list of items to be sent to IIT JEE offices in different zones

- Completed original OMR application form with photo and signatures.
- Duly attested photocopy of your 10<sup>th</sup> class or equivalent examination pass certificate where your date of birth is mentioned clearly. In case, the pass certificate is not available, enclose your admit card and mark sheet of 10<sup>th</sup> class examination. In case, the 10<sup>th</sup> class certificate does not mention your date of birth, enclose a copy of an authenticated document mentioning date of birth.
- For SC/ST candidates, an attested copy of caste certificate in the format as given in the Information Brochure (see **APPENDIX-4**). Certificates in any other format will not be accepted.
- Write your application number in copies of all certificates that you enclose.
- The institute copy of the bank challan (if applicable).
- Request letter for enlarged font question papers (see **APPENDIX-2**) **only if applicable**.

### 2. Procedure to put the forms in the envelope

- Please write all relevant information on the envelope carefully.
- Duly completed OMR application form should be folded only along the original fold (shown in the middle by a dotted line). Make sure that your photograph, your signature and the BARCODE are on the outer side of the fold.
- Do not staple or paste together the Application Form and the attested copies of certificates. Keep the photo copies of certificates on the inner side of the folded OMR form.
- While putting the enclosures into the envelope, **make sure the BARCODE and the application number on the OMR form are visible** through the window of the envelope. This will help us to scan the

BARCODE without opening the envelope, as soon as it is received in our office for quick processing.

### 3. Where and how to send the completed application form

- The envelope containing the completed OMR application form and enclosures should be sent to the zonal IIT (both examination cities chosen by you belong to this zone, refer **APPENDIX-3**).
- The contact addresses of the zonal IITs to which you should send your envelope with the application are given on the back cover of this brochure.
- The envelope must be sent by **Registered Post/Speed Post ONLY**. Do not send it through ordinary post or private courier services. Please keep the postal receipt for future reference.

### 4. Last date for receipt of the completed application form

The last date for receipt of duly completed application forms (Off-line or printed copy of On-line) at IITs is **17:00 hrs. on December 20, 2010**. Any application received after this date will not be accepted. **Office of JEE is not responsible for any postal delay or irregularity or loss during postal transit.**

### 5. Proof of sending the completed application form

- No acknowledgement card will be sent.
- No claim of submission of the application will be entertained unless it is supported with the photo copies of the postal receipt and of the filled OMR application form.
- No correspondence with regard to the application, eligibility, and admit card will be entertained unless the application number is quoted.
- **You can check the status of your application through our websites/ SMS/IVRS (see Appendix-7) from January 1, 2011.**

## IX. ADMIT CARD

The admit card will bear the name, application number, registration number, photograph, signature, date of birth, address, language of Question Paper, category and subcategory of the

candidate, along with name and address of the JEE Centre allotted.

The admit cards will be sent by Speed Post to the address mentioned in the application form only to all those eligible candidates who have submitted valid application forms, complete in all respects and received at IITs within the stipulated period. JEE office will not be responsible for any postal delay or irregularity resulting in non-delivery of the Admit Card. **No duplicate admit card will be issued.**

The candidate should carefully examine the Admit Card received by him/her for all the entries made therein. In case of any discrepancy, the candidate should inform the issuing institute immediately. You must bring the admit card to the examination centre. Only those candidates, who hold valid Admit cards, will be allowed to write the examination.

If the Admit Card is not received by **March 20, 2011**:

You can obtain your registration number and examination centre from the institute of your zone through phone (IVRS – Interactive Voice Response System) / Website (**APPENDIX-7**). After obtaining the data, write your name, registration number and the examination centre on two identical halves of an A4-size paper. Affix your photographs (same version of photograph which you have pasted in your application form) one on each half and sign on the bottom of the photographs. Then get this attested by the Head of your School / Institution last attended / gazetted officer / notary public. Meet the IIT Representative with this paper on the day of examination (April 10, 2011) one hour before the commencement of the examination at the office of the Presiding Officer of the examination centre. The IIT Representative will accept one half and give the other back to you.

### 1. Identity Verification

At the examination hall, the admit card should be presented to the invigilators for verification. The candidate's identity will be verified with respect to his/her details on the admit card and the centre verification record. If the identity is in doubt, the candidate will not be allowed to appear in the examination. The authorities may at their discretion permit the candidate to appear for the examination after completing formalities including taking of thumb impression. No extra time will be allowed for these formalities to be completed. Any impersonation will lead to disqualification in JEE.

## 2. Safe-keep of the admit card

Since the qualified candidates are required to produce the admit card at the time of counselling and admission, it should be carefully preserved till the admission through JEE-2011 is completed.

## X. RESULTS OF JEE-2011

### 1. Performance in JEE-2011

The answer paper of JEE-2011 is a machine-gradable Optical Response Sheet (ORS). These sheets are graded and scrutinized with extreme care after the examination. **There is NO provision for re-grading, re-totalling or perusal of the ORS. Neither the original answer sheets (ORS) nor will the responses read from the candidates' ORS be supplied to any candidate in any form. No correspondence in this regard will be entertained.**

Candidates will get to know their All India Ranks (AIR) / Category ranks through our websites / SMS / IVRS on or after **May 25, 2011**.

Candidates can view their marks and the model answer keys of JEE-2011 on JEE websites from **June 3, 2011**.

### 2. Ranking

Only those candidates who attempted both **Paper 1** and **Paper 2** will be considered for the ranking. Marks in Chemistry in JEE will be equal to marks in Chemistry section of **Paper 1** plus marks in Chemistry section of **Paper 2**. Similar procedure will be followed for Physics and Mathematics. The sum of the marks obtained in the individual subjects in JEE will be the aggregate marks for the candidate.

The average of the marks scored by all such candidates will be computed for each of the three subjects. These will be the *Minimum Qualifying Marks for Ranking* (MQMR) in the individual subjects.

Based on the MQMR in the individual subjects as well as the aggregate marks in the examination, a Common Merit List (CML) will be prepared without any relaxed criteria, such that the number of candidates in this list is equal to the total number of seats available in all the participating institutes put together. The aggregate marks scored by the last candidate in the CML will be the CML cut-off score (CCS).

Next, the merit list of the OBC candidates will be prepared. If the number of OBC candidates in the CML is equal to or more than 1.4 times the number

of available OBC seats, then the OBC merit list will contain all these candidates.

In case the number of OBC candidates qualified in the CML is less than 1.4 times the number of available OBC seats, then relaxation (maximum of 10%) to the individual MQMR as well as to the CCS will be applied, and an OBC merit list will be prepared, in which the number of candidates will be at most 1.4 times the number of available OBC seats.

By applying 50% relaxation to the individual MQMR as well as to the CCS, separate merit list for SC, ST and PD candidates will be prepared. The number of candidates in each of these lists will be at most 1.4 times the number of available seats in the respective categories.

While preparing the merit lists, if a candidate belongs to more than one category/ subcategory of relaxed norms, then he/she for the purpose of ranking shall be considered in all the categories in which he/she qualifies.

There will be no separate waiting list for candidates.

### 3. Tie-break

The tie-break criterion in the CML and category lists adopted for awarding ranks to the candidates who have scored the same aggregate marks is as follows:

For each subject, the average marks will be calculated on the basis of the marks obtained by those candidates who have scored more than or equal to MQMR in that subject.

Among the candidates having the same aggregate marks, a candidate will be ranked higher than the rest, if he/she has scored higher marks in the subject having the lowest average marks calculated as above. If there is a tie after this procedure, then the marks obtained by the tied candidates in the subject with the second-lowest average marks will be considered, and the above procedure will be repeated. Candidates tied even after this procedure will be given the same rank.

### 4. Preparatory course

A further relaxation of 50% is given based on the aggregate and MQMR marks of the last candidate in the SC, ST and PD category merit lists. Separate preparatory course lists will be prepared for SC, ST and PD by including the candidates meeting this further relaxation. The number of candidates in

these lists will be limited to 2.0 times the number of seats remaining vacant after exhausting the respective categories.

## **XI. COUNSELLING AND ADMISSIONS**

### **1. Counselling**

The details of courses available in participating institutes are given in **APPENDIX-8**. Some institutes may offer new courses not listed in the appendix. Information regarding these courses will be available at the time of counselling.

The seats in various courses of the institutes (IITs, IT-BHU Varanasi and ISM Dhanbad) are allotted strictly on the basis of the AIR, category rank, and the choices of each qualified student submitted either On-line or Off-line at the time of counselling.

The details of the counselling and admission procedure will be published on the JEE websites and in the Counselling Brochure.

The results of JEE are also being used by other institutions for admissions to their courses / programmes. The names of these institutes will be published on the JEE website at a later date. Therefore JEE provides performance data to these institutes. Candidates should contact these institutes directly for admission.

If you belong to GE category, then the counselling will be On-line. Counselling for the rest of the candidates will take place in the corresponding zonal IIT that has issued your admit card or IT-BHU Varanasi / ISM Dhanbad (see **Section VII, S.No. 12**). However, the candidates may request for a transfer of counselling zone by paying a fee of Rs. 500 /- by demand draft in favour of "Chairman, JEE-2011" along with a request letter addressed to the zonal chairman.

### **2. Physical fitness**

Candidates who qualify in JEE-2011 will have to submit a physical fitness certificate from a registered medical practitioner in the prescribed format that will be made available at an appropriate time. Candidates will be admitted only if they are physically fit for pursuing a course of study at the participating institutes.

### **3. Requirements for Mining courses**

Those who opt for Mining Engineering and Mining Machinery courses should make sure that they do not have any form of colour blindness. They will be required to submit a certificate from a registered medical practitioner to this effect at the time of counselling/admission. The standards of visual

acuity with or without glasses will be adhered to strictly for candidates seeking admission to Mining Engineering as per DGMS Circular 14 of 1972. Persons with one-eyed vision are not permitted to work underground. Candidates with the above limitations are not allowed to opt for admission to Mining Engineering or Mining Machinery Engineering.

### **4. Female candidates for Mining courses**

Section 46 (1) of the Mines Act, 1952 states that "No woman shall, notwithstanding anything contained in any other law, be employed (a) in any part of a mine which is below ground, (b) in any mine above ground except between 6:00 and 19:00 hrs.". Hence, female candidates are not admitted to Mining Engineering and Mining Machinery Engineering at ISM Dhanbad, whereas the corresponding programmes at IIT Kharagpur and IT-BHU Varanasi, have no such restriction.

### **5. Aptitude test for B. Arch. and B. Des.**

Candidates desirous of joining the B. Arch. (Architecture) and B. Des. (Design) courses will be required to qualify in an aptitude test to be conducted at each counselling institute on **June 10, 2011**.

The test will consist of one paper of three hours duration – from 09:00 to 12:00 hrs. Candidates have to qualify in the Aptitude Test to become eligible for admission to either B. Arch. or B. Des. courses. Question papers for aptitude test for B. Arch. and B. Des. will be in English only. Syllabus for this test is given in **APPENDIX-1**.

All qualified candidates can register for this Aptitude test On-line after **May 30, 2011**. They must appear for the test on **June 10, 2011** at the institutes where counselling will be held.

Any change in the counselling procedure shall be notified to the candidates through the website and through the counseling brochure that will be made available after the result announcement.

## **XII. FEE STRUCTURE**

The present fee structure (in Indian rupees) of different institutes is given in **APPENDIX-9** as a guideline. However, the exact fees to be paid would be provided at the time of counselling. **All candidates who accept the offer of admission by paying registration fees will become ineligible for appearing in JEE-2012 or later. Fees once paid will not be refunded.**

## Chemistry

### Physical chemistry

**General topics:** Concept of atoms and molecules; Dalton's atomic theory; Mole concept; Chemical formulae; Balanced chemical equations; Calculations (based on mole concept) involving common oxidation-reduction, neutralisation, and displacement reactions; Concentration in terms of mole fraction, molarity, molality and normality.

**Gaseous and liquid states:** Absolute scale of temperature, ideal gas equation; Deviation from ideality, van der Waals equation; Kinetic theory of gases, average, root mean square and most probable velocities and their relation with temperature; Law of partial pressures; Vapour pressure; Diffusion of gases.

**Atomic structure and chemical bonding:** Bohr model, spectrum of hydrogen atom, quantum numbers; Wave-particle duality, de Broglie hypothesis; Uncertainty principle; Qualitative quantum mechanical picture of hydrogen atom, shapes of s, p and d orbitals; Electronic configurations of elements (up to atomic number 36); Aufbau principle; Pauli's exclusion principle and Hund's rule; Orbital overlap and covalent bond; Hybridisation involving s, p and d orbitals only; Orbital energy diagrams for homonuclear diatomic species; Hydrogen bond; Polarity in molecules, dipole moment (qualitative aspects only); VSEPR model and shapes of molecules (linear, angular, triangular, square planar, pyramidal, square pyramidal, trigonal bipyramidal, tetrahedral and octahedral).

**Energetics:** First law of thermodynamics; Internal energy, work and heat, pressure-volume work; Enthalpy, Hess's law; Heat of reaction, fusion and vapourization; Second law of thermodynamics; Entropy; Free energy; Criterion of spontaneity.

**Chemical equilibrium:** Law of mass action; Equilibrium constant, Le Chatelier's principle (effect of concentration, temperature and pressure); Significance of  $\Delta G$  and  $\Delta G^\circ$  in chemical equilibrium; Solubility product, common

ion effect, pH and buffer solutions; Acids and bases (Bronsted and Lewis concepts); Hydrolysis of salts.

**Electrochemistry:** Electrochemical cells and cell reactions; Standard electrode potentials; Nernst equation and its relation to  $\Delta G$ ; Electrochemical series, emf of galvanic cells; Faraday's laws of electrolysis; Electrolytic conductance, specific, equivalent and molar conductivity, Kohlrausch's law; Concentration cells.

**Chemical kinetics:** Rates of chemical reactions; Order of reactions; Rate constant; First order reactions; Temperature dependence of rate constant (Arrhenius equation).

**Solid state:** Classification of solids, crystalline state, seven crystal systems (cell parameters  $a, b, c, \alpha, \beta, \gamma$ ), close packed structure of solids (cubic), packing in fcc, bcc and hcp lattices; Nearest neighbours, ionic radii, simple ionic compounds, point defects.

**Solutions:** Raoult's law; Molecular weight determination from lowering of vapour pressure, elevation of boiling point and depression of freezing point.

**Surface chemistry:** Elementary concepts of adsorption (excluding adsorption isotherms); Colloids: types, methods of preparation and general properties; Elementary ideas of emulsions, surfactants and micelles (only definitions and examples).

**Nuclear chemistry:** Radioactivity: isotopes and isobars; Properties of  $\alpha, \beta$  and  $\gamma$  rays; Kinetics of radioactive decay (decay series excluded), carbon dating; Stability of nuclei with respect to proton-neutron ratio; Brief discussion on fission and fusion reactions.

### Inorganic Chemistry

**Isolation/preparation and properties of the following non-metals:** Boron, silicon, nitrogen, phosphorus, oxygen, sulphur and halogens; Properties of allotropes of carbon (only diamond and graphite), phosphorus and sulphur.



**Preparation and properties of the following compounds:**

Oxides, peroxides, hydroxides, carbonates, bicarbonates, chlorides and sulphates of sodium, potassium, magnesium and calcium; Boron: diborane, boric acid and borax; Aluminium: alumina, aluminium chloride and alums; Carbon: oxides and oxyacid (carbonic acid); Silicon: silicones, silicates and silicon carbide; Nitrogen: oxides, oxyacids and ammonia; Phosphorus: oxides, oxyacids (phosphorus acid, phosphoric acid) and phosphine; Oxygen: ozone and hydrogen peroxide; Sulphur: hydrogen sulphide, oxides, sulphurous acid, sulphuric acid and sodium thiosulphate; Halogens: hydrohalic acids, oxides and oxyacids of chlorine, bleaching powder; Xenon fluorides.

**Transition elements (3d series):** Definition, general characteristics, oxidation states and their stabilities, colour (excluding the details of electronic transitions) and calculation of spin-only magnetic moment; Coordination compounds: nomenclature of mononuclear coordination compounds, *cis-trans* and ionisation isomerisms, hybridization and geometries of mononuclear coordination compounds (linear, tetrahedral, square planar and octahedral).

**Preparation and properties of the following compounds:**

Oxides and chlorides of tin and lead; Oxides, chlorides and sulphates of  $\text{Fe}^{2+}$ ,  $\text{Cu}^{2+}$  and  $\text{Zn}^{2+}$ ; Potassium permanganate, potassium dichromate, silver oxide, silver nitrate, silver thiosulphate.

**Ores and minerals:** Commonly occurring ores and minerals of iron, copper, tin, lead, magnesium, aluminium, zinc and silver.

**Extractive metallurgy:** Chemical principles and reactions only (industrial details excluded); Carbon reduction method (iron and tin); Self reduction method (copper and lead); Electrolytic reduction method (magnesium and aluminium); Cyanide process (silver and gold).

**Principles of qualitative analysis:** Groups I to V (only  $\text{Ag}^+$ ,  $\text{Hg}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Pb}^{2+}$ ,  $\text{Bi}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Cr}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Mn}^{2+}$  and  $\text{Mg}^{2+}$ ); Nitrate, halides (excluding fluoride), sulphate and sulphide.

**Organic Chemistry**

**Concepts:** Hybridisation of carbon; Sigma and pi-bonds; Shapes of simple organic molecules; Structural and geometrical isomerism; Optical isomerism of compounds containing up to two asymmetric centres, (*R,S* and *E,Z* nomenclature excluded); IUPAC nomenclature of simple organic compounds (only hydrocarbons, mono-functional and bi-functional compounds); Conformations of ethane and butane (Newman projections); Resonance and hyperconjugation; Keto-enol tautomerism; Determination of empirical and molecular formulae of simple compounds (only combustion method); Hydrogen bonds: definition and their effects on physical properties of alcohols and carboxylic acids; Inductive and resonance effects on acidity and basicity of organic acids and bases; Polarity and inductive effects in alkyl halides; Reactive intermediates produced during homolytic and heterolytic bond cleavage; Formation, structure and stability of carbocations, carbanions and free radicals.

**Preparation, properties and reactions of alkanes:**

Homologous series, physical properties of alkanes (melting points, boiling points and density); Combustion and halogenation of alkanes; Preparation of alkanes by Wurtz reaction and decarboxylation reactions.

**Preparation, properties and reactions of alkenes and alkynes:**

Physical properties of alkenes and alkynes (boiling points, density and dipole moments); Acidity of alkynes; Acid catalysed hydration of alkenes and alkynes (excluding the stereochemistry of addition and elimination); Reactions of alkenes with  $\text{KMnO}_4$  and ozone; Reduction of alkenes and alkynes; Preparation of alkenes and alkynes by elimination reactions; Electrophilic addition reactions of alkenes with  $\text{X}_2$ ,  $\text{HX}$ ,  $\text{HOX}$  ( $\text{X}=\text{halogen}$ ) and  $\text{H}_2\text{O}$ ; Addition reactions of alkynes; Metal acetylides.

**Reactions of benzene:** Structure and aromaticity; Electrophilic substitution reactions: halogenation, nitration, sulphonation, Friedel-Crafts alkylation and acylation; Effect of *o*-, *m*- and *p*-directing groups in monosubstituted benzenes.

**Phenols:** Acidity, electrophilic substitution reactions (halogenation, nitration and sulphonation); Reimer-Tieman reaction, Kolbe reaction.

**Characteristic reactions of the following (including those mentioned above):** Alkyl halides: rearrangement reactions of alkyl carbocation, Grignard reactions, nucleophilic substitution reactions; Alcohols: esterification, dehydration and oxidation, reaction with sodium, phosphorus halides,  $ZnCl_2$ /concentrated HCl, conversion of alcohols into aldehydes and ketones; Ethers: Preparation by Williamson's Synthesis; Aldehydes and Ketones: oxidation, reduction, oxime and hydrazone formation; aldol condensation, Perkin reaction; Cannizzaro reaction; haloform reaction and nucleophilic addition reactions (Grignard addition); Carboxylic acids: formation of esters, acid chlorides and amides, ester hydrolysis; Amines: basicity of substituted anilines and aliphatic amines, preparation from nitro compounds, reaction with nitrous acid, azo coupling reaction of diazonium salts of aromatic amines, Sandmeyer and related reactions of diazonium salts; carbylamine reaction; Haloarenes: nucleophilic aromatic substitution in haloarenes and substituted haloarenes (excluding Benzyne mechanism and Cine substitution).

**Carbohydrates:** Classification; mono- and disaccharides (glucose and sucrose); Oxidation, reduction, glycoside formation and hydrolysis of sucrose.

**Amino acids and peptides:** General structure (only primary structure for peptides) and physical properties.

**Properties and uses of some important polymers:** Natural rubber, cellulose, nylon, teflon and PVC.

**Practical organic chemistry:** Detection of elements (N, S, halogens); Detection and identification of the following functional groups: hydroxyl (alcoholic and phenolic), carbonyl (aldehyde and ketone), carboxyl, amino and nitro; Chemical methods of separation of mono-functional organic compounds from binary mixtures.

## Mathematics

**Algebra:** Algebra of complex numbers, addition, multiplication, conjugation, polar representation, properties of modulus and principal argument, triangle inequality, cube roots of unity, geometric interpretations.

Quadratic equations with real coefficients, relations between roots and coefficients, formation of quadratic equations with given roots, symmetric functions of roots.

Arithmetic, geometric and harmonic progressions, arithmetic, geometric and harmonic means, sums of finite arithmetic and geometric progressions, infinite geometric series, sums of squares and cubes of the first  $n$  natural numbers.

Logarithms and their properties.

Permutations and combinations, Binomial theorem for a positive integral index, properties of binomial coefficients.

Matrices as a rectangular array of real numbers, equality of matrices, addition, multiplication by a scalar and product of matrices, transpose of a matrix, determinant of a square matrix of order up to three, inverse of a square matrix of order up to three, properties of these matrix operations, diagonal, symmetric and skew-symmetric matrices and their properties, solutions of simultaneous linear equations in two or three variables.

Addition and multiplication rules of probability, conditional probability, Bayes Theorem, independence of events, computation of probability of events using permutations and combinations.

**Trigonometry:** Trigonometric functions, their periodicity and graphs, addition and subtraction formulae, formulae involving multiple and sub-multiple angles, general solution of trigonometric equations.

Relations between sides and angles of a triangle, sine rule, cosine rule, half-angle formula and the area of a triangle, inverse trigonometric functions (principal value only).

## **Analytical geometry:**

**Two dimensions:** Cartesian coordinates, distance between two points, section formulae, shift of origin.

Equation of a straight line in various forms, angle between two lines, distance of a point from a line; Lines through the point of intersection of two given lines, equation of the bisector of the angle between two lines, concurrency of lines; Centroid, orthocentre, incentre and circumcentre of a triangle.

Equation of a circle in various forms, equations of tangent, normal and chord.

Parametric equations of a circle, intersection of a circle with a straight line or a circle, equation of a circle through the points of intersection of two circles and those of a circle and a straight line.

Equations of a parabola, ellipse and hyperbola in standard form, their foci, directrices and eccentricity, parametric equations, equations of tangent and normal.

Locus Problems.

**Three dimensions:** Direction cosines and direction ratios, equation of a straight line in space, equation of a plane, distance of a point from a plane.

**Differential calculus:** Real valued functions of a real variable, into, onto and one-to-one functions, sum, difference, product and quotient of two functions, composite functions, absolute value, polynomial, rational, trigonometric, exponential and logarithmic functions.

Limit and continuity of a function, limit and continuity of the sum, difference, product and quotient of two functions, L'Hospital rule of evaluation of limits of functions.

Even and odd functions, inverse of a function, continuity of composite functions, intermediate value property of continuous functions.

Derivative of a function, derivative of the sum,

difference, product and quotient of two functions, chain rule, derivatives of polynomial, rational, trigonometric, inverse trigonometric, exponential and logarithmic functions.

Derivatives of implicit functions, derivatives up to order two, geometrical interpretation of the derivative, tangents and normals, increasing and decreasing functions, maximum and minimum values of a function, Rolle's Theorem and Lagrange's Mean Value Theorem.

**Integral calculus:** Integration as the inverse process of differentiation, indefinite integrals of standard functions, definite integrals and their properties, Fundamental Theorem of Integral Calculus.

Integration by parts, integration by the methods of substitution and partial fractions, application of definite integrals to the determination of areas involving simple curves.

Formation of ordinary differential equations, solution of homogeneous differential equations, separation of variables method, linear first order differential equations.

**Vectors:** Addition of vectors, scalar multiplication, dot and cross products, scalar triple products and their geometrical interpretations.

## **Physics**

**General:** Units and dimensions, dimensional analysis; least count, significant figures; Methods of measurement and error analysis for physical quantities pertaining to the following experiments: Experiments based on using Vernier calipers and screw gauge (micrometer), Determination of  $g$  using simple pendulum, Young's modulus by Searle's method, Specific heat of a liquid using calorimeter, focal length of a concave mirror and a convex lens using  $u-v$  method, Speed of sound using resonance column, Verification of Ohm's law using voltmeter and ammeter, and specific resistance of the material of a wire using meter bridge and post office box.

**Mechanics:** Kinematics in one and two dimensions (Cartesian coordinates only), projectiles; Uniform Circular motion; Relative velocity.

Newton's laws of motion; Inertial and uniformly accelerated frames of reference; Static and dynamic friction; Kinetic and potential energy; Work and power; Conservation of linear momentum and mechanical energy.

Systems of particles; Centre of mass and its motion; Impulse; Elastic and inelastic collisions.

Law of gravitation; Gravitational potential and field; Acceleration due to gravity; Motion of planets and satellites in circular orbits; Escape velocity.

Rigid body, moment of inertia, parallel and perpendicular axes theorems, moment of inertia of uniform bodies with simple geometrical shapes; Angular momentum; Torque; Conservation of angular momentum; Dynamics of rigid bodies with fixed axis of rotation; Rolling without slipping of rings, cylinders and spheres; Equilibrium of rigid bodies; Collision of point masses with rigid bodies.

Linear and angular simple harmonic motions.

Hooke's law, Young's modulus.

Pressure in a fluid; Pascal's law; Buoyancy; Surface energy and surface tension, capillary rise; Viscosity (Poiseuille's equation excluded), Stoke's law; Terminal velocity, Streamline flow, equation of continuity, Bernoulli's theorem and its applications.

Wave motion (plane waves only), longitudinal and transverse waves, superposition of waves; Progressive and stationary waves; Vibration of strings and air columns; Resonance; Beats; Speed of sound in gases; Doppler effect (in sound).

Thermal physics: Thermal expansion of solids, liquids and gases; Calorimetry, latent heat; Heat conduction in one dimension; Elementary concepts of convection and radiation; Newton's law of cooling; Ideal gas laws; Specific heats ( $C_V$

and  $C_p$  for monoatomic and diatomic gases); Isothermal and adiabatic processes, bulk modulus of gases; Equivalence of heat and work; First law of thermodynamics and its applications (only for ideal gases); Blackbody radiation: absorptive and emissive powers; Kirchhoff's law; Wien's displacement law, Stefan's law.

**Electricity and magnetism:** Coulomb's law; Electric field and potential; Electrical potential energy of a system of point charges and of electrical dipoles in a uniform electrostatic field; Electric field lines; Flux of electric field; Gauss's law and its application in simple cases, such as, to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell.

Capacitance; Parallel plate capacitor with and without dielectrics; Capacitors in series and parallel; Energy stored in a capacitor.

Electric current; Ohm's law; Series and parallel arrangements of resistances and cells; Kirchhoff's laws and simple applications; Heating effect of current.

Biot-Savart's law and Ampere's law; Magnetic field near a current-carrying straight wire, along the axis of a circular coil and inside a long straight solenoid; Force on a moving charge and on a current-carrying wire in a uniform magnetic field.

Magnetic moment of a current loop; Effect of a uniform magnetic field on a current loop; Moving coil galvanometer, voltmeter, ammeter and their conversions.

Electromagnetic induction: Faraday's law, Lenz's law; Self and mutual inductance; RC, LR and LC circuits with D.C. and A.C. sources.

**Optics:** Rectilinear propagation of light; Reflection and refraction at plane and spherical surfaces; Total internal reflection; Deviation and dispersion of light by a prism; Thin lenses; Combinations of mirrors and thin lenses; Magnification.

Wave nature of light: Huygen's principle, interference limited to Young's double-slit experiment.

**Modern physics:** Atomic nucleus; Alpha, beta and gamma radiations; Law of radioactive decay; Decay constant; Half-life and mean life; Binding energy and its calculation; Fission and fusion processes; Energy calculation in these processes.

Photoelectric effect; Bohr's theory of hydrogen-like atoms; Characteristic and continuous X-rays, Moseley's law; de Broglie wavelength of matter waves.

### **SYLLABUS FOR APTITUDE TEST FOR B.Arch. and B.Des. PROGRAMMES**

**Freehand drawing:** This would comprise of simple drawing depicting the total object in its right form and proportion, surface texture, relative location and details of its component parts in appropriate scale. Common domestic or day-to-day life usable objects like furniture, equipment, etc., from memory.

**Geometrical drawing:** Exercises in geometrical drawing containing lines, angles, triangles,

quadrilaterals, polygons, circles etc. Study of plan (top view), elevation (front or side views) of simple solid objects like prisms, cones, cylinders, cubes, splayed surface holders etc.

**Three-dimensional perception:** Understanding and appreciation of three-dimensional forms with building elements, colour, volume and orientation. Visualization through structuring objects in memory.

**Imagination and aesthetic sensitivity:** Composition exercise with given elements. Context mapping. Creativity check through innovative uncommon test with familiar objects. Sense of colour grouping or application.

**Architectural awareness:** General interest and awareness of famous architectural creations – both national and international, places and personalities (architects, designers etc. ) in the related domain.

**Candidates are advised to bring geometry box sets, pencils, erasers and colour pencils or crayons for the Aptitude Test.**

FORMAT OF REQUEST LETTER FOR ENLARGED FONT QUESTION PAPERS

From

Date: \_\_\_\_\_

Name of candidate

**Application Number**

Address:

Phone: \_\_\_\_\_

Mobile: \_\_\_\_\_

Email: \_\_\_\_\_

To

The Chairman  
JEE-2011

IIT \_\_\_\_\_

(Write Appropriate Zone)

Dear Sir,

*Sub: Requirement of Enlarged Font Question Papers*

I am a candidate with poor eye-sight and unable to read question paper printed in normal size font even with corrective spectacles/lenses.

I would like to have Enlarged Font Question Papers (English / Hindi) during the examination.

Thanking you,

\_\_\_\_\_  
***Signature of the candidate***

\_\_\_\_\_  
***Signature of the Parent/Guardian***

(Name of the candidate)

## LIST OF CITIES / TOWNS FOR JEE - 2011

<b>IIT BOMBAY ZONE</b>	
State/City/Town	Code
<b>GOA</b>	
Panaji	101
<b>GUJARAT</b>	
Ahmedabad	102
Rajkot	103
Surat	104
Vadodara	105
<b>KARNATAKA</b>	
Belgaum	106
<b>MAHARASHTRA</b>	
Aurangabad	107
Latur	108
Mumbai	109
Nagpur	110
Nashik	111
Navi Mumbai	112
Pune	113
Thane	114
<b>RAJASTHAN</b>	
Ajmer	115
Bikaner	116
Jaipur	117
Jodhpur	118
Udaipur	119
<b>IIT DELHI ZONE</b>	
State/City/Town	Code
<b>DELHI</b>	
Delhi (East)	201
Delhi (West)	202
Delhi (North)	203
Delhi (South)	204
Delhi (Central)	205
<b>HARYANA</b>	
Ballabgarh	206
Faridabad	207
Gurgaon	208
<b>JAMMU &amp; KASHMIR</b>	
Jammu	209
<b>MADHYA PRADESH</b>	
Indore	210
Ujjain	211
<b>UTTAR PRADESH</b>	
Aligarh	212
Gautam Budh Nagar (Noida)	213
Ghaziabad	214
Mathura	215
<b>UAE</b>	
Dubai	216
<b>IIT GUWAHATI ZONE</b>	
State/City/Town	Code
<b>ARUNACHAL PRADESH</b>	
Itanagar	301
<b>ASSAM</b>	
Dibrugarh	302
Goalpara	303
Guwahati	304
Silchar	305
Tezpur	306
<b>BIHAR</b>	
Bhagalpur	307
Gaya	308
Katihar	309
Muzaffarpur	310
Patna	311
<b>MANIPUR</b>	
Imphal	312
<b>MEGHALAYA</b>	
Shillong	313
<b>WEST BENGAL</b>	
Siliguri	314
<b>IIT KANPUR ZONE</b>	
State/City/Town	Code
<b>MADHYA PRADESH</b>	
Bhopal	401
Gwalior	402
Jabalpur	403
<b>UTTARAKHAND</b>	
Nainital	404
Pantnagar	405
<b>UTTAR PRADESH</b>	
Agra	406
Allahabad	407
Gorakhpur	408
Jhansi	409
Kanpur	410
Lucknow	411
Raibareli	412
<b>IIT KHARAGPUR ZONE</b>	
State/City/Town	Code
<b>ANDAMAN AND NICOBAR ISLAND</b>	
Port Blair	501
<b>ANDHRA PRADESH</b>	
Visakhapatnam	502
<b>CHHATISGARH</b>	
Bhilai	503
Bilaspur	504
Raipur	505
<b>JHARKHAND</b>	
Bokaro	506
Dhanbad	507
Jamshedpur	508
Ranchi	509
<b>ORISSA</b>	
Balasore	510
Berhampur	511
Bhubaneswar	512
Cuttack	513
Rourkela	514
Sambalpur	515
<b>SIKKIM</b>	
Gangtok	516
<b>TRIPURA</b>	
Agartala	517
<b>WEST BENGAL</b>	
Asansol	518
Bardhaman	519
Belur	520
Durgapur	521
Kharagpur	522
Kolkata (North)	523
Kolkata (Salt Lake)	524
Kolkata (South)	525
Malda	526
<b>IIT MADRAS ZONE</b>	
State/City/Town	Code
<b>ANDHRA PRADESH</b>	
Bapatla	601
Guntur	602
Hyderabad	603
Nellore	604
Tirupathi	605
Vijayawada	606
Warangal	607
<b>KARNATAKA</b>	
Bangalore	608
Mangalore	609
Mysore	610
<b>KERALA</b>	
Kochi	611
Kozhikode	612
Palakkad	613
Thiruvananthapuram	614
Trisoor	615
<b>PUDUCHERRY</b>	
Puducherry	616
<b>TAMIL NADU</b>	
Chennai	617
Coimbatore	618
Madurai	619
Salem	620
Tiruchirapalli	621
Tirunelveli	622
<b>IIT ROORKEE ZONE</b>	
State/City/Town	Code
<b>CHANDIGARH</b>	
Chandigarh	701
<b>HARYANA</b>	
Ambala	702
Kurukshetra	703
Panipat	704
Rohtak	705
Sonipat	706
Yamuna Nagar	707
<b>HIMACHAL PRADESH</b>	
Mandi	708
Palampur	709
Shimla	710
<b>PUNJAB</b>	
Amritsar	711
Bhatinda	712
Jalandhar	713
Ludhiana	714
Patiala	715
<b>UTTARAKHAND</b>	
Dehradun	716
Roorkee	717
<b>UTTAR PRADESH</b>	
Bareilly	718
Meerut	719
Moradabad	720
Saharanpur	721
Varanasi	722

**FORM OF CERTIFICATE TO BE PRODUCED BY SCHEDULED CASTES  
AND SCHEDULED TRIBES CANDIDATES**

1. This is to certify that Shri/ Smt./ Kumari\* \_\_\_\_\_  
son/daughter\* of \_\_\_\_\_ of \_\_\_\_\_ Village/Town\*  
\_\_\_\_\_ District/Division\* \_\_\_\_\_ of State/Union  
Territory\* \_\_\_\_\_ belongs to the \_\_\_\_\_ Scheduled  
Caste / Scheduled Tribe\* under :-

- \* The Constitution (Scheduled Castes) Order, 1950
- \* The Constitution (Scheduled Tribes) Order, 1950
- \* The Constitution (Scheduled Castes) (Union Territories) Order, 1951
- \* The Constitution (Scheduled Tribes) (Union Territories) Order, 1951
- [As amended by the Scheduled Castes and Scheduled Tribes Lists (Modification Order) 1956, the Bombay Reorganisation Act, 1960, the Punjab Reorganisation Act, 1966, the State of Himachal Pradesh Act, 1970, the North Eastern Areas (Reorganisation) Act, 1971, the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 1976 and the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 2002]
- \* The Constitution (Jammu and Kashmir) Scheduled Castes Order, 1956;
- \* The Constitution (Andaman and Nicobar Islands) Scheduled Tribes Order, 1959, as amended by the Scheduled Castes and Scheduled Tribes Order (Amendment) Act, 1976;
- \* The Constitution (Dadara and Nagar Haveli) Scheduled Castes Order, 1962;
- \* The Constitution (Dadara and Nagar Haveli) Scheduled Tribes Order, 1962;
- \* The Constitution (Pondicherry) Scheduled Castes Order, 1964;
- \* The Constitution (Uttar Pradesh) Scheduled Tribes Order, 1967;
- \* The Constitution (Goa, Daman and Diu) Scheduled Castes Order, 1968;
- \* The Constitution (Goa, Daman and Diu) Scheduled Tribes Order, 1968;
- \* The Constitution (Nagaland) Scheduled Tribes Order, 1970;
- \* The Constitution (Sikkim) Scheduled Castes Order, 1978;
- \* The Constitution (Sikkim) Scheduled Tribes Order, 1978;
- \* The Constitution (Jammu and Kashmir) Scheduled Tribes Order, 1989;
- \* The Constitution (Scheduled Castes) Order (Amendment) Act, 1990;
- \* The Constitution (Scheduled Tribes) Order (Amendment) Act, 1991;
- \* The Constitution (Scheduled Tribes) Order (Second Amendment) Act, 1991;

2. # This certificate is issued on the basis of the Scheduled Castes / Scheduled Tribes\* Certificate issued to Shri /Shrimati\* \_\_\_\_\_ father/mother\* of Shri /Shrimati /Kumari\* \_\_\_\_\_ of Village/Town\* \_\_\_\_\_ in District/Division\* \_\_\_\_\_ of the State State/Union Territory\* \_\_\_\_\_ who belong to the Caste / Tribe\* which is recognised as a Scheduled Caste / Scheduled Tribe\* in the State / Union Territory\* \_\_\_\_\_ issued by the \_\_\_\_\_ dated \_\_\_\_\_.

3. Shri/ Shrimati/ Kumari \* \_\_\_\_\_ and / or\* his / her\* family ordinarily reside(s)\*\* in Village/Town\* \_\_\_\_\_ of \_\_\_\_\_ District/Division\* of the State Union Territory\* of \_\_\_\_\_.

Signature: \_\_\_\_\_  
Designation \_\_\_\_\_  
(with seal of the Office)

Place: \_\_\_\_\_ State/Union Territory\* \_\_\_\_\_  
Date: \_\_\_\_\_

\* Please delete the word(s) which are not applicable.

# Applicable in the case of SC/ST Persons who have migrated from another State/UT.



## IMPORTANT NOTES

1. The term “ordinarily reside(s)\*\*” used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.
2. Officers competent to issue Caste/Tribe certificates:
  - (i) District Magistrate / Additional District Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / Ist Class Stipendiary Magistrate / City Magistrate / Sub-Divisional Magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner.
  - (ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
  - (iii) Revenue Officers not below the rank of Tehsildar.
  - (iv) Sub-divisional Officer of the area where the candidate and/ or his family normally reside(s).
  - (v) Administrator / Secretary to Administrator / Development Officer (Lakshdweep Island).
3. Certificate issued by any other authority will be rejected.

**FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR ADMISSION  
TO CENTRAL EDUCATIONAL INSTITUTIONS (CEIs), UNDER THE GOVERNMENT OF INDIA**

This is to certify that Shri / Smt. / Kum\*. \_\_\_\_\_ Son /  
Daughter\* of Shri / Smt.\* \_\_\_\_\_ of Village/Town\*  
\_\_\_\_\_ District/Division\*  
\_\_\_\_\_ in the \_\_\_\_\_ State belongs to  
the \_\_\_\_\_ Community which is recognized as a backward class under:

- (i) Resolution No. 12011/68/93-BCC(C) dated 10/09/93 published in the Gazette of India Extraordinary Part I Section I No. 186 dated 13/09/93.
- (ii) Resolution No. 12011/9/94-BCC dated 19/10/94 published in the Gazette of India Extraordinary Part I Section I No. 163 dated 20/10/94.
- (iii) Resolution No. 12011/7/95-BCC dated 24/05/95 published in the Gazette of India Extraordinary Part I Section I No. 88 dated 25/05/95.
- (iv) Resolution No. 12011/96/94-BCC dated 9/03/96.
- (v) Resolution No. 12011/44/96-BCC dated 6/12/96 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 11/12/96.
- (vi) Resolution No. 12011/13/97-BCC dated 03/12/97.
- (vii) Resolution No. 12011/99/94-BCC dated 11/12/97.
- (viii) Resolution No. 12011/68/98-BCC dated 27/10/99.
- (ix) Resolution No. 12011/88/98-BCC dated 6/12/99 published in the Gazette of India Extraordinary Part I Section I No. 270 dated 06/12/99.
- (x) Resolution No. 12011/36/99-BCC dated 04/04/2000 published in the Gazette of India Extraordinary Part I Section I No. 71 dated 04/04/2000.
- (xi) Resolution No. 12011/44/99-BCC dated 21/09/2000 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 21/09/2000.
- (xii) Resolution No. 12015/9/2000-BCC dated 06/09/2001.
- (xiii) Resolution No. 12011/1/2001-BCC dated 19/06/2003.
- (xiv) Resolution No. 12011/4/2002-BCC dated 13/01/2004.
- (xv) Resolution No. 12011/9/2004-BCC dated 16/01/2006 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 16/01/2006.

Shri / Smt. / Kum. \_\_\_\_\_ and / or his family ordinarily reside(s)  
in the \_\_\_\_\_ District / Division of \_\_\_\_\_ State. This is also to certify that  
he/she does not belong to the persons/sections (Creamy Layer) mentioned in Column 3 of the Schedule to the Government of  
India, Department of Personnel & Training O.M. No. 36012/22/93-Estt.(SCT) dated 08/09/93 which is modified vide OM No.  
36033/3/2004 Estt.(Res.) dated 09/03/2004.

Dated:

District Magistrate / Deputy Commissioner /  
Competent Authority

Seal

\* Please delete the word(s) which are not applicable.

**NOTE:**

- (a) The term 'Ordinarily' used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.
- (b) The authorities competent to issue Caste Certificates are indicated below:
  - (i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / Ist Class Stipendiary Magistrate / Sub-Divisional magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (not below the rank of Ist Class Stipendiary Magistrate).
  - (ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
  - (iii) Revenue Officer not below the rank of Tehsildar' and
  - (iv) Sub-Divisional Officer of the area where the candidate and / or his family resides.

## DECLARATION / UNDERTAKING - FOR OBC CANDIDATES ONLY

I, \_\_\_\_\_ son / daughter of Shri \_\_\_\_\_ resident of village/town/city \_\_\_\_\_ district \_\_\_\_\_ State \_\_\_\_\_ hereby declare that I belong to the \_\_\_\_\_ community which is recognised as a backward class by the Government of India for the purpose of reservation in services as per orders contained in Department of Personnel and Training Office Memorandum No.36012/22/93- Estt. (SCT), dated 8/9/1993. It is also declared that I do not belong to persons/sections (Creamy Layer) mentioned in Column 3 of the Schedule to the above referred Office Memorandum, dated 8/9/1993, which is modified vide Department of Personnel and Training Office Memorandum No.36033/3/2004 Estt.(Res.) dated 9/3/2004.

I also declare that the condition of status / annual income for 'Creamy Layer' of my parents is within prescribed limits as on financial year ending on March 31, 2010.

Signature of the Candidate

Place:

Date:

Declaration / undertaking not signed by Candidate will be rejected

### NOTE:

**“The admission is provisional and is subject to the community certificate being verified through the proper channels. If the verification reveals that the claim of the candidate to belong to Other Backward Classes or not to belong to the creamy layer is false, his/her admission will be terminated forthwith without assigning any further reasons and without prejudice to such further action as may be taken under the provisions of the Indian Penal Code for production of false certificates.”**





**(NOTE: Appendix 7 is on the inside of back cover)**

**APPENDIX-8**

**AVAILABILITY OF COURSES**

<b>Programme</b>	<b>IIT Bombay</b>	<b>IIT Delhi</b>	<b>IIT Guwahati</b>	<b>IIT Kanpur</b>	<b>IIT Kharagpur</b>	<b>IIT Madras</b>	<b>IIT Roorkee</b>	<b>IT-BHU Varanasi</b>	<b>ISM Dhanbad</b>
<b>B.Tech. 4 Years</b>									
Aerospace Engineering	•			•	•	•			
Agricultural & Food Engineering					•				
Biological Sciences and Bioengineering				•					
Biotechnology			•			•	•		
Biotechnology & Biochemical Engineering					•				
Ceramic Engineering								•	
Chemical Engineering	•	•	•	•	•	•	•	•	•
Chemical Science and Technology			•						
Civil Engineering	•	•	•	•	•	•	•	•	
Computer Science & Engineering	•	•	•	•	•	•	•	•	•
Electrical Engineering	•	•		•	•	•	•	•	•
Electrical Engineering (Power)		•							
Electronics Engineering								•	
Electronics & Communication Engineering			•				•		•
Electronics & Electrical Communication Engineering					•				
Electronics & Electrical Engineering			•						
Engineering Physics	•	•	•			•			
Environmental Engineering									•
Industrial Engineering					•				
Instrumentation Engineering					•				
Manufacturing Science and Engineering					•				
Materials Science and Engineering				•					
Metallurgical & Materials Engineering					•	•	•		
Mathematics and Computing			•						
Mechanical Engineering	•	•	•	•	•	•	•	•	•
Metallurgical Engineering								•	
Metallurgical Engineering & Materials Science	•								
Mineral Engineering									•
Mining Engineering					•			•	•
Mining Machinery Engineering									•
Naval Architecture & Ocean Engineering						•			
Ocean Engineering & Naval Architecture					•				
Petroleum Engineering									•
Production and Industrial Engineering		•					•		
Pulp & Paper Engineering							•		
Textile Technology		•							
<b>B. Pharm. 4 Years</b>									
Pharmaceutics								•	

<b>B. Des. 4 years</b>									
Design				•					
<b>B. Arch. 5 years</b>									
Architecture						•		•	
<b>M. Pharm. Dual Degree 5 years</b>									
Pharmaceutics									•
<b>M.Sc. Integrated 5 years</b>									
Applied Geology						•			
Applied Mathematics								•	
Applied Physics									•
Chemistry	•			•	•			•	•
Economics				•	•				
Exploration Geophysics					•				
Mathematics and Computing					•				•
Mathematics & Scientific Computing				•					
Physics				•	•			•	
<b>BS &amp; MS Dual Degree 5 years</b>									
Physics								•	
<b>M.Sc. Tech. Integrated 5 years</b>									
Applied Geology									•
Applied Geophysics									•
<b>M.Tech. Integrated 5 year</b>									
Geological Technology								•	
Geophysical Technology								•	
Engineering Physics									•
Industrial Chemistry									•
Mathematics & Computing		•							•
Polymer Science and Technology								•	
<b>B.Tech./M.Tech. Dual Degree 5 Years</b>									
Aerospace Engineering				•	•	•			
Aerospace Engineering with M.Tech. in Applied Mechanics with specializations in Biomedical Engineering						•			
Agricultural and Food Engineering with M.Tech in any of the listed specializations					•				
Biochemical Engineering									•
Biochemical Engineering & Biotechnology		•							
Bioengineering with M.Tech. in Biomedical Technology									•
Biotechnology						•			
Biotechnology & Biochemical Engineering					•				
Ceramic Engineering									•
Chemical Engineering		•		•	•	•			
Chemical Engineering with M. Tech. in Hydrocarbon Engineering								•	
Chemical Engineering with M. Tech. in Process Systems Design & Engineering	•								
Civil Engineering				•					

Civil Engineering with M. Tech. in Applied Mechanics in any of the listed specialization						•			
Civil Engineering with M. Tech. in Infrastructural Civil Engineering						•			
Civil Engineering with M. Tech. in Structural Engineering								•	
Civil Engineering with M. Tech. in any of the listed specialization				•		•			
Computer Science & Engineering		•		•		•		•	
Computer Science & Engineering with M. Tech. in Information Technology								•	
Electrical Engineering				•					
Electrical Engineering with M. Tech. in Applied Mechanics with specialization in Biomedical Engineering						•			
Electrical Engineering with M. Tech. in Communications and Signal Processing	•								
Electrical Engineering with M. Tech. in Communication Engineering						•			
Electrical Engineering with M. Tech. in Information & Communication Technology		•							
Electrical Engineering with M. Tech. in Microelectronics	•								
Electrical Engineering with M. Tech. in Microelectronics & VLSI Design						•			
Electrical Engineering with M. Tech. in any of the listed specializations					•				
Electrical Engineering with M.Tech. in Power Electronics							•	•	
Electrical Engineering with M. Tech. in Power Systems and Power Electronics						•			
Electronics & Communication Engineering with M. Tech. in Wireless Communication								•	
Electronics & Electrical Communication Engineering with M. Tech. in any of the listed specializations					•				
Energy Engineering with M.Tech in Energy Systems Engineering	•								
Engineering Design with M.Tech in Automotive Engineering						•			
Engineering Design with M.Tech in Biomedical Design						•			
Engineering Physics with M.Tech in Engineering Physics with specialization in Nano Science	•								
Industrial Engineering with M. Tech. in Industrial Engineering and Management					•				
Manufacturing Science & Engineering with M. Tech. in Industrial Engineering & Management					•				
Material Science & Technology								•	
Mechanical Engineering				•				•	
Mechanical Engineering with M. Tech. in Computer Aided Design & Automation	•								
Mechanical Engineering with M. Tech. in Computer Integrated Manufacturing	•								
Mechanical Engineering with M. Tech. in Energy Technology						•			
Mechanical Engineering with M. Tech. in Intelligent Manufacturing						•			
Mechanical Engineering with M. Tech. in Product Design						•			
Mechanical Engineering with M. Tech. in any of the listed specialization					•				



Metallurgical Engineering								•	
Metallurgical Engineering & Materials Science with M. Tech. in Ceramics & Composites	•								
Metallurgical Engineering & Materials Science with M. Tech. in Metallurgical Process Engineering	•								
Metallurgical & Materials Engineering						•			
Metallurgical & Materials Engineering with M. Tech. in Metallurgical & Materials Engineering					•				
Mineral Engineering with M.Tech. in Material Technology									•
Mineral Engineering with M.Tech. in Mineral Resource Management									•
Mining Engineering					•			•	
Mining Engineering with M.Tech. in Mining Engineering									•
Mining Engineering with MBA									•
Mining Engineering with M.Tech. in Safety Engineering and Disaster Management in Mines					•				
Naval Architecture & Ocean Engineering						•			
Naval Architecture Engineering with M.Tech. in Applied Mechanics in any of the listed specializations						•			
Ocean Engineering & Naval Architecture					•				
Petroleum Engineering with M.Tech. in Petroleum Management									•
Process Engineering with MBA							•		

Programme	IIT Bhubaneswar	IIT Gandhinagar	IIT Hyderabad	IIT Indore	IIT Mandi	IIT Patna	IIT Rajasthan	IIT Ropar
<b>B.Tech. 4 Years</b>								
Chemical Engineering		•						
Civil Engineering	•							
Computer Science and Engineering			•	•	•	•	•	•
Electrical Engineering	•	•	•	•	•	•	•	•
Mechanical Engineering	•	•	•	•	•	•	•	•

**FEE STRUCTURE OF IITs**

The present fee structure (in Indian rupees) of different institutes is given in the tables below as a guideline. However, the exact fee structure would be provided at the time of counselling.

Fee Particulars →	One time payment	Payable every semester	Refundable caution deposit	Medical insurance premium (per annum)	Total fees payable at the time of admission*
<b>Bhubaneswar</b>	3800	28800 (3800)	6000	300	38900 (13900)
<b>Bombay</b>	3400	33550 (8550)	3000	126	40076 (15076)
<b>Delhi</b>	2500	27035 (2035)	4000	450	33985 (8985)
<b>Gandhinagar</b>	3400	33550 (8550)	3000	126	40076 (15076)
<b>Guwahati</b>	2150	28972 (3972)	4922	--	36044 (11044)
<b>Hyderabad</b>	1700	29100 (4100)	2000	567	33367 (8367)
<b>Indore</b>	3400	33550 (8550)	3000	126	40076 (15076)
<b>Kanpur</b>	2750	34692 (9692)	7000	--	44442 (19442)
<b>Kharagpur</b>	3100	28650 (3650)	6000	650	38400 (13400)
<b>Madras</b>	1750	27850 (2850)	2000	742	32342 (7342)
<b>Mandi</b>	2890	32750 (7750)	4000	280	39920 (14920)
<b>Patna</b>	2150	28550 (3550)	4500	578	35778 (10778)
<b>Rajasthan</b>	2150	30750 (5750)	4000	1000	37900 (12900)
<b>Roorkee</b>	2890	32750 (7750)	4000	280	39920 (14920)
<b>Ropar</b>	2500	27035 (2045)	4000	450	33985 (8995)

Students who have PIO (Person of Indian Origin) or OCI (Overseas Citizen of India) status would be treated at par with Indian students so far as fee structure is concerned.

Particulars	IT-BHU Varanasi	ISM Dhanbad
One time payment	3325	6000**
Payable every odd semester	13960	19492*** (5192)
Payable every even semester	13960	17000*** (2700)
Refundable caution deposit	4000	5000
Total fees payable at the time of admission*	21285	30492 (16192)

Fees payable by SC/ST students, different from those payable by others, are shown in parenthesis ( ).

\* In addition to these, mess admission / mess deposit and medical insurance premium may have to be paid.

\*\*This includes Rs.1800/- towards charges for blazer and tie.

\*\*\* The fee is for B.Tech. program which includes tuition fee of Rs.14,000 per semester. The tuition fee for second year onwards for 5 year integrated M.Sc./M.Sc. Tech program will be Rs.10,000 per semester. The tuition fee for dual degree program will be Rs.14,000 per semester for the first four years and in the fifth year it will be Rs.6000/- for M.Tech. and Rs.20,000 for MBA. The amount payable in odd and even semesters for these students in subsequent years will vary accordingly.

## WEBSITES, IVRS AND SMS FOR JEE-2011

Institute	Website	IVRS	
		STD code	Number
IIT Bombay	<a href="http://www.jee.iitb.ac.in">http://www.jee.iitb.ac.in</a>	022	2576 7062
IIT Delhi	<a href="http://jee.iitd.ac.in">http://jee.iitd.ac.in</a>	011	2658 1064 2658 2002
IIT Guwahati	<a href="http://www.iitg.ac.in/jee">http://www.iitg.ac.in/jee</a>	0361	269 2788
IIT Kanpur	<a href="http://www.iitk.ac.in/jee">http://www.iitk.ac.in/jee</a>	0512	259 7236 679 7236
IIT Kharagpur	<a href="http://www.iitkgp.ernet.in/jee">http://www.iitkgp.ernet.in/jee</a>	03222	27 8241
IIT Madras	<a href="http://jee.iitm.ac.in">http://jee.iitm.ac.in</a>	044	2257 8223
IIT Roorkee	<a href="http://www.iitr.ac.in/jee">http://www.iitr.ac.in/jee</a>	01332	27 9806
IT-BHU, Varanasi	<a href="http://www.itbhu.ac.in">http://www.itbhu.ac.in</a>		
ISM, Dhanbad	<a href="http://www.ismdhanbad.ac.in">http://www.ismdhanbad.ac.in</a>		

**Cell numbers for Short Message Service (SMS)**

Application status can also be obtained through two SMS servers. Candidates may send SMS to either of the following numbers:

9434709991
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9434709992
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by sending their application number (nine digits without the first character 'B') as message text (for example, write 10000001 for application number 'B10000001' and send to any of these numbers to know the status of the Application No. B10000001).

## IMPORTANT DATES

Last date of receipt of completed JEE application form	Monday	December 20, 2010
Joint Entrance Examination	Sunday	April 10, 2011
Declaration of Results	Wednesday	May 25, 2011
On-line filling of CHOICES open to ALL the qualified candidates	Monday to Monday	May 30-June 13, 2011
Medical examination and counseling for qualified PD Candidates (the schedule will be announced on the IIT websites)	Wednesday to Friday	June 08-10, 2011
Counseling for SC/ST/OBC candidates	Wednesday to Friday	June 08-10, 2011
Architecture/Design Aptitude Test	Friday	June 10, 2011
Last date of receipt of filled and duly signed choice sheets	Friday	June 17, 2011
Websites release of course allocation	Monday	June 27, 2011

## ADDRESSES FOR SENDING THE COMPLETE APPLICATION FORM

Candidates should send the completed application form to the particular Institute located in the zone where he/she wishes to appear for JEE-2011.

Zone	Address	Phone/Fax
IIT Bombay	Chairman, JEE, IIT Bombay, Powai, Mumbai 400 076	Ph : (022) 25764063 Fax : (022) 25720305
IIT Delhi	Chairman, JEE, IIT Delhi, Hauz Khas, Delhi 110 016	Ph : (011) 26591785 Fax : (011) 26581067
IIT Guwahati	Chairman, JEE, IIT Guwahati, Guwahati 781 039	Ph : (0361) 2692795 Fax : (0361) 2582180
IIT Kanpur	Chairman, JEE, IIT Kanpur, Kanpur 208 016	Ph : (0512) 2597335 Fax : (0512) 2590103
IIT Kharagpur	Chairman, JEE, IIT Kharagpur, Kharagpur 721 302	Ph : (03222) 282102 Fax : (03222) 278242
IIT Madras	Chairman, JEE, IIT Madras, Chennai 600 036	Ph : (044) 22578220 Fax : (044) 22578224
IIT Roorkee	Chairman, JEE, IIT Roorkee, Roorkee 247 667	Ph : (01332) 284272 Fax : (01332) 285346