# JEE (ADVANCED) 2015


# INFORMATION BROCHURE

# JOINT ENTRANCE EXAMINATION (ADVANCED) 2015

**Sunday, May 24, 2015**

**Paper 1 09:00 to 12:00 IST**

**Paper 2 14:00 to 17:00 IST**

**http://jeeadv.iitb.ac.in**

# INFORMATION BROCHURE

**(Version 1.0; 30/09/2014)**

# CONTENTS

## 1. THE EXAMINATION

The Joint Entrance Examination (Advanced) 2015 [JEE (Advanced) 2015] will be conducted by the seven zonal Indian Institutes of Technology (IITs) under the guidance of the Joint Admission Board (JAB) 2015. The performance of a candidate in this examination will form the basis for admission to the Bachelor's, Integrated Master's and Dual Degree programs (entry at the 10+2 level) in the sixteen IITs and the Indian School of Mines (ISM). The decisions of the JAB 2015 will be final in all matters related to JEE (Advanced) 2015 and admission to IITs and ISM.

## 2. SCHEDULE OF JEE (ADVANCED) 2015

The examination consists of two papers, Paper 1 and Paper 2, each of 3 hours duration and will be held as per the following schedule:

| | | |
|---|---|---|
| Day, date | Sunday, May 24, 2015 | |
| Time | Paper 1 | 09:00 to 12:00 IST |
| | Paper 2 | 14:00 to 17:00 IST |

Both the papers are compulsory.

NOTE: Candidates using the services of a scribe (see **13. SERVICES OF A SCRIBE**) will get one hour compensatory time i.e., the end time will be 13:00 IST for Paper 1 and 18:00 IST for Paper 2.

The schedule will remain the same even if the above day is declared a public holiday.

## 3. INSTITUTES

Indian Institutes of Technology are institutions of national importance established through Acts of Parliament for fostering excellence in education. Over the years, IITs have created a world class educational platform that is dynamically sustained through quality teaching and internationally acclaimed research with excellent infrastructure and the best available minds. The faculty and alumni of IITs occupy key positions in academia and industry, both in India and abroad, and continue to make a considerable impact in all sections of the Society.

The Indian School of Mines, Dhanbad, is one of the oldest institutions in India and is known for its immense contributions towards society at large, and science and technology in particular.

The primary objectives of IITs and ISM are as follows:

- To create an environment that encourages freedom of thought and pursuit of excellence, and inculcates the necessary vision and self-discipline to achieve excellence.
- To build a solid foundation of scientific and technical knowledge and to prepare competent and motivated engineers and scientists.
- To kindle an entrepreneurial spirit among the students.
- To prepare the students to become outstanding professionals and contribute to nation-building.

At present, there are sixteen IITs located across the country.

## NAMES, LOCATIONS AND ABBREVIATIONS OF THE SIXTEEN INDIAN INSTITUTES OF TECHNOLOGY

| | | |
|---|---|---|
| Indian Institute of Technology Bombay | Mumbai | IITB* |
| Indian Institute of Technology Bhubaneshwar | Bhubaneshwar | IITBBS |
| Indian Institute of Technology (Banaras Hindu University) | Varanasi | IIT(BHU) |
| Indian Institute of Technology Delhi | New Delhi | IITD* |
| Indian Institute of Technology Guwahati | Guwahati | IITG* |
| Indian Institute of Technology Gandhinagar | Gandhinagar | IITGN |
| Indian Institute of Technology Hyderabad | Hyderabad | IITH |
| Indian Institute of Technology Indore | Indore | IITI |
| Indian Institute of Technology Jodhpur | Jodhpur | IITJ |
| Indian Institute of Technology Kanpur | Kanpur | IITK* |
| Indian Institute of Technology Kharagpur | Kharagpur | IITKGP* |
| Indian Institute of Technology Madras | Chennai | IITM* |
| Indian Institute of Technology Mandi | Mandi | IITMandi |
| Indian Institute of Technology Patna | Patna | IITP |
| Indian Institute of Technology Roorkee | Roorkee | IITR* |
| Indian Institute of Technology Ropar | Ropar | IITRPR |

* Zonal IITs which coordinate the activities of JEE (Advanced) 2015 examination.

## 4. ACADEMIC PROGRAMS

IITs and ISM offer courses leading to a Bachelor's, Integrated Master's or Bachelor-Master Dual Degree in Engineering, Science, Architecture, Design or Pharmaceutics. Both Bachelor's and Master's degrees are awarded to candidates enrolled in the dual degree programs upon successful completion of the course curriculum. In a few of the IITs, students enrolled into the 4-year Bachelor's program have the option to convert to B.Tech.(Honors) and/or B.Tech. with Minors. The types of academic programs offered at IITs and ISM and their minimum duration are given in the next page.

However, not all programs and courses are available in all the institutes. The programs and courses offered in 2014 are given in the section **32. LIST OF COURSES OFFERED BY IITs AND ISM IN THE ACADEMIC YEAR 2014-15.** The courses that will be offered in 2015 will be announced at the time of seat allocation (i.e., filling-in of choices for admission).

The programs are credit-based and thus offer the flexibility to progress at one's own pace. A minimum level of performance is essential for satisfactory progress. The medium of instruction is English.

**TYPES OF ACADEMIC PROGRAMS OFFERED AT IITs AND ISM, AND THEIR MINIMUM DURATION[¶]**

| | | |
|---|---|---|
| B.Tech. | Bachelor of Technology | 4 years |
| B.S. | Bachelor of Science | 4 years |
| B.Pharm. | Bachelor of Pharmaceutics | 4 years |
| B.Des. | Bachelor of Design | 4 years |
| B.Arch. | Bachelor of Architecture | 5 years |
| Dual Degree B.Tech.-M.Tech. | Dual Degree Bachelor of Technology and Master of Technology | 5 years |
| Dual Degree B.S. and M.S. | Dual Degree Bachelor of Science and Master of Science | 5 years |
| Dual Degree B.Tech.-M.B.A. | Dual Degree Bachelor of Technology and Master of Business Administration | 5 years |
| Integrated Dual Degree M.Pharm. | Integrated Dual Degree Master of Pharmaceutics | 5 years |
| Integrated M.Tech. | Integrated Master of Technology | 5 years |
| Integrated M.Sc. | Integrated Master of Science | 5 years |
| Integrated M.Sc.Tech. | Integrated Master of Science (Technology) | 5 years |

[¶] Only those academic programs for which admission is based on JEE (Advanced) examination are shown here. These Institutes also have other academic programs (M.Tech., M.Sc., M.Des., Ph.D., etc.) for candidates who have a Bachelor's and / or a Master's Degree.

## 5. NATIONALITY

Candidates who are **NOT** citizens of India at the time of registering for JEE (Advanced) 2015 (by birth or naturalized) are treated as foreign nationals. Seats allotted to foreign nationals are supernumerary. However, not all Institutes may have supernumerary seats. The availability of supernumerary seats will be announced at the time of seat allocation.

## 6. RESERVATION OF SEATS

Indian nationals belonging to certain categories are admitted under the seats reserved for them in accordance with the rules of the Government of India. The categories and the extent of reservation are as follows:

- Other Backward Classes belonging to the Non-Creamy Layer (OBC-NCL) – 27% of seats in every course. The backward class should be in the central list of OBCs (http://www.ncbc.nic.in) as of June 1, 2014.

  Candidates belonging to the creamy layer of OBC are **NOT** entitled for reservation. Such candidates are treated as belonging to the general (GEN) (i.e., unreserved) category.

- Scheduled Caste (SC) – 15% of seats in every course.

- Scheduled Tribe (ST) – 7.5% of seats in every course.

  The benefit of reservation will be given only to those castes and tribes that are mentioned in the respective central list of corresponding states published by the Government of India (http://socialjustice.nic.in/sclist.php and http://tribal.nic.in/Content/list%20of%20Scheduled%20Tribes%20in%20India.aspx).

- Persons with Disability (PwD) – 3% of seats in every category, viz., GEN, OBC-NCL, SC and ST.

  Benefit would be given to those who have at least 40% impairment irrespective of the type of disability i.e., locomotor, visual or dyslexic.

  Leprosy-cured candidates who are otherwise fit to pursue the course are also included in this sub-category.

Candidates belonging to the OBC-NCL, SC, ST and PwD categories will be declared as qualified on the basis of a relaxed criterion (see **21. MERIT LISTS)**.

Unfilled seats in the OBC-NCL category can be allotted to GEN category candidates whereas seats remaining vacant under the SC and ST categories shall **NOT** be allotted to candidates belonging to other categories. The reservation for PwD candidates is horizontal and hence, unfilled seats will be allotted to candidates belonging to the respective categries i.e., unfilled SC-PwD seats will be allotted to candidates belonging to the SC category and so on.

The category chosen by a candidate at the time of registration for JEE (Advanced) 2015 will be final and requests for change of category will **NOT** be entertained.

Foreign nationals are outside the ambit of reservation of seats under the OBC-NCL, SC, ST and PwD categories as specified herein.

## 7. PREFERENTIAL ALLOTMENT OF SEATS

Defence Service (DS) category candidates are children of defence / paramilitary personnel killed or permanently disabled in action during war or peacetime operations. Two seats are available for preferential allotment in each Institute for DS category candidates. To avail of this preferential allotment, a DS category candidate must be in the Common Merit List of JEE (Advanced) 2015 (see **21. MERIT LISTS).**

## 8. JEE (MAIN) 2015

Candidates who wish to appear in JEE (Advanced) 2015 must write Paper-1 of JEE (Main) 2015 which is likely to be held in the month of April 2015. Candidates may visit the website www.jeemain.nic.in for information about JEE (Main) 2015.

## 9. ELIGIBILITY CRITERIA FOR APPEARING IN JEE (ADVANCED) 2015

A candidate, including a foreign national, must fulfill each and every one of the following five criteria to appear in JEE (Advanced) 2015.

Criterion 1 – Performance in JEE (Main) 2015: The candidate should be among the top 1,50,000 (all categories included) in JEE (Main) 2015. The percentages of the total number of candidates for various categories is as follows:

> 50.5% for GEN (from the common merit list), 27% for OBC-NCL, 15% for SC and 7.5% for ST. Within each of these four categories, 3% horizontal reservation is available for PwD candidates.

The category-wise distribution of the number of "top" candidates is shown in the following table:

**Category-wise distribution of "top" candidates (Criterion 1)**

| CATEGORY | Number of "Top" candidates | |
|---|---|---|
| **GEN** | 73,478 | Total 75,750 |
| **GEN-PwD** | 2,272 | |
| **OBC-NCL** | 39,285 | Total 40,500 |
| **OBC-NCL-PwD** | 1,215 | |
| **SC** | 21,825 | Total 22,500 |
| **SC-PwD** | 675 | |
| **ST** | 10,912 | Total 11,250 |
| **ST-PwD** | 338 | |

Criterion 2 – Age limit: The candidate should have been born on or after October 1, 1990 if belonging to the GEN or OBC-NCL category and on or after October 1, 1985 if belonging to the SC, ST or PwD category.

Criterion 3 – Number of attempts: A candidate can attempt JEE (Advanced) a maximum of two times and that too in consecutive years. Therefore, JEE (Advanced) 2015 should be either the candidate's FIRST attempt OR the SECOND consecutive attempt.

Criterion 4 – Appearance in Class XII (or equivalent) examination: The candidate should have appeared for the Class XII (or equivalent) examination for the first time in all the subjects in either 2014 or 2015.

Candidates who appeared for the Class XII (or equivalent) examination in 2014 and wish to re-appear for the same in 2015 (either for improvement or because they failed in one or more subjects), will have to re-appear in all the subjects in 2015.

Those who appeared for the first time in their Class XII (or equivalent) examination in 2013 or earlier are **NOT** eligible. However, candidates whose Class XII (or equivalent) examination Board results for the academic year 2012-13 were declared after June 2013 are eligible to appear for JEE (Advanced) 2015.

Criterion 5 – Earlier admission at IITs/ISM: The candidate should **NOT** have taken admission (irrespective of whether or not he/she continued in the program) **OR** even accepted admission by paying admission fee at any of the IITs or ISM in the past; even candidates whose admission was cancelled are **NOT** eligible. However, candidates who have been admitted to a preparatory course in any of the IITs in 2014 can appear for JEE (Advanced) 2015.

## 10. EXAMINATIONS CONSIDERED AS EQUIVALENT TO CLASS XII

- The final examination of the 10+2 system, conducted by a Central or State Board recognized by the Association of Indian Universities (www.aiuweb.org).
- Intermediate or two-year Pre-University examination conducted by a Board or University recognized by the Association of Indian Universities.
- Final examination of the two-year course of the Joint Services Wing of the National Defence Academy.

- Senior Secondary School Examination conducted by the National Institute of Open Schooling with a minimum of five subjects.
- Any Public School, Board or University examination in India or in a foreign country recognized as equivalent to the 10+2 system by the Association of Indian Universities (AIU).
- H.S.C. vocational examination.
- A Diploma recognized by the All India Council for Technical Education (www.aicte-india.org) or a State Board of Technical Education of at least 3 years duration.
- General Certificate Education (GCE) examination (London, Cambridge or Sri Lanka) at the Advanced (A) level.
- High School Certificate Examination of the Cambridge University or International Baccalaureate Diploma of the International Baccalaureate Office, Geneva.

Candidates who have completed Class XII (or equivalent) examination outside India or from a Board not specified above should produce a certificate from the Association of Indian Universities to the effect that the examination they have passed is equivalent to the Class XII examination.

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

## 11. REGISTRATION FOR JEE (ADVANCED) 2015

- Candidates should register for appearing in JEE (Advanced) 2015. Registration is through the online portal (http://jeeadv.iitb.ac.in) only.
- The candidate should satisfy each and every one of the five eligibility criteria [see **9. ELIGIBILITY CRITERIA FOR APPEARING IN JEE (ADVANCED) 2015]**.
- Registration will be cancelled if, at a later date, it is found that the candidate does not meet even one of these five eligibility criteria.
- Even if a candidate did not opt for appearing in JEE (Advanced) 2015 while registering for JEE (Main) 2015, he/she can register for JEE (Advanced) 2015.
- Application for JEE (Advanced) 2015 **CANNOT** be withdrawn after registration is completed.
- Registration fee is **NEITHER** refundable **NOR** transferable.
- Detailed instructions for online registration will be provided on the registration portal.

| | |
|---|---|
| Online registration portal | http://jeeadv.iitb.ac.in |
| Online registration begins | Saturday, May 2, 2015 10:00 IST |
| Online registration closes | Thursday, May 7, 2015 17:00 IST |

## 12. REGISTRATION FEE FOR JEE (ADVANCED) 2015

| CATEGORY | GENDER | |
|---|---|---|
| | MALE | FEMALE |
| **Examination centres in India** | | |
| GEN | ₹ 2000 | ₹ 1000 |
| OBC-NCL | ₹ 2000 | ₹ 1000 |
| SC | ₹ 1000 | ₹ 500 |
| ST | ₹ 1000 | ₹ 500 |
| PwD | ₹ 1000 | ₹ 500 |
| **Examination centre: Dubai** | | |
| All categories | USD 220 | USD 220 |

- The registration fee shown above DOES NOT INCLUDE service charges, processing fees and any other charges that the banks may charge.
- Detailed instructions related to the payment of registration fee will be given on the online registration portal.

## 13. SERVICES OF A SCRIBE

- The services of a scribe (amanuensis) are available to candidates who are visually impaired, dyslexic, have disability in the upper limbs or have lost fingers / hands thereby preventing them from bubbling the optical response sheet (ORS).
- To avail this benefit, the candidate should request the Chairman, JEE (Advanced) 2015, of the respective zonal IIT in the prescribed format (FORM EC5). The requisition, along with a copy of the PwD certificate (FORM EC3), should be uploaded at the time of online registration for JEE

(Advanced) 2015. The formats for the request letter and PwD certificate are given in **31. FORMATS FOR CERTIFICATES**.

- The scribe will be a Class XI student from science stream with Mathematics as one of the subjects.
- Candidates are **NOT** allowed to bring scribes of their choice. Candidates will have to use the scribe provided by the Presiding Officer (PO) of the Examination Centre. The candidate will be able to meet the scribe one hour before the start of the examination.
- If it is found that a candidate has used the services of a scribe, and consequently one extra hour, but does not possess the extent of disability that warrants the use of a scribe, he/she will be excluded from the process of evaluation, ranking and admission. If the candidate has already been admitted, his/her admission will be cancelled.

## 14. DOCUMENTS / INFORMATION REQUIRED FOR REGISTRATION FOR JEE (ADVANCED) 2015

Given below is a list of certificates and other documents that are to be uploaded at the time of online registration for JEE (Advanced) 2015.

### All candidates

(1) A colour photograph of full frontal (face) view, with the head centred in the frame covering 70-80% of the photograph and taken within the last six months. The photograph should be such that it allows unambiguous identification of the candidate.

(2) Class X certificate if the date of birth is mentioned in it OR birth certificate.

(3) Class XII (or equivalent examination) certificate (for those who appeared for this examination in 2014).

(4) Scanned copy of candidate's full signature.

(5) Scanned copy of left-hand thumb impression.

(6) If the name is not same as in the Class X certificate, gazette notification showing the change of name.

**Candidates seeking admission under the OBC-NCL category**

OBC-NCL certificate (FORM EC2) issued on or after June 1, 2014 and conforming to the latest guidelines of the Government of India. Visit http://www.ncbc.nic.in for latest guidelines and updates of the Central List of State-wise OBCs.

**Candidates seeking admission under the SC or ST category**

Caste (for SC) or tribe (for ST) certificate (FORM EC1).

**Candidates seeking admission under the PwD category**

Disability certificate (FORM EC3) issued by a district medical board / competent authority issued on or after June 1, 2014.

**Candidates needing the services of a scribe**

(1) Request letter to the Chairman of the respective zonal IIT (FORM EC5).

(2) PwD certificate (FORM EC3) issued by the district medical board.

**Candidates seeking admission under the DS category**

Certificate (FORM EC4) issued by a competent authority in the Directorate of Resettlement and Rehabilitation, New Delhi under the Ministry of Defence or the Ministry of Home Affairs, Government of India.

**Candidates whose Class XII examination Board is outside India or not listed in section** 10. EXAMINATIONS CONSIDERED AS EQUIVALENT TO CLASS XII

A certificate from the Association of Indian Universities to the effect that the examination qualified by the candidates is equivalent to the Class XII examination.

## 15. ADMIT CARD

- Candidates who successfully complete registering for JEE (Advanced) 2015 can download the admit card from the online registration portal (http://jeeadv.iitb.ac.in).
- The admit card will bear the following details of the candidate: Name, Roll number for JEE (Advanced) 2015, photograph, signature, date of birth, address for correspondence, category and language of the question paper.

  In addition, it will have the name and address of the examination centre allotted to the candidate.

  Candidates should carefully examine the entries in the admit card and in case of any discrepancy, contact the Chairman, JEE (Advanced) 2015 of the respective zonal IIT.

- In case the admit card is not available for downloading, the candidate should contact the Chairman, JEE (Advanced) 2015 of the respective zonal IIT.
- A copy of the downloaded admit card should be produced at the time of examination. The original admit card will be issued to the candidate during the Paper 1 examination. This original admit card must be retained safely till all the formalities of admission are complete.

| | |
|---|---|
| Portal for downloading admit card | http://jeeadv.iitb.ac.in |
| Admit card downloading | Saturday, May 9, 2015 10:00 IST to Tuesday, May 12, 2015 17:00 IST |
| Rectification of discrepancies in the admit card | Saturday, May 9, 2015 10:15 IST to Thursday, May 14, 2015 17:00 IST |

## 16. QUESTION PAPERS

- There are two papers, Paper 1 and Paper 2.
- Each question paper will consist of three separate sections viz., Physics, Chemistry and Mathematics. The syllabi are given in **30. SYLLABI**.
- The question papers will consist of objective type (multiple choice) and numerical answer type questions designed to test comprehension, reasoning and analytical ability of candidates.
- Incorrect answers to some of the questions will be awarded negative marks.
- The question paper will be in either English or Hindi. Candidates must exercise the choice of question paper language while registering for JEE

(Advanced) 2015. Change of question paper language will **NOT** be entertained after the registration.

**17. OPTICAL RESPONSE SHEET**

- The answer sheet of JEE (Advanced) 2015 is a machine-readable ORS.
- Candidates will be given a two-page ORS. The two pages of the ORS will have the same lay-out.
- The first page of the ORS is machine readable. It is designed so as to leave impressions of the responses on the second page.
- Candidates should not separate or disturb the alignment of the two pages of the ORS at any stage and under any circumstance.
- The answers to all the questions should be marked on the first page of the ORS by darkening the appropriate bubble or bubbles (as per the instructions given in the question paper).
- Candidates should use BLACK BALL POINT pen for darkening the bubbles.
- Candidates should apply adequate pressure to ensure that a proper impression is made on the second page of the ORS. Other instructions for darkening the bubbles will be printed on the question paper and candidates must strictly adhere to these instructions.
- The second page of the ORS will be handed over to the candidates by the invigilator at the end of the examination.

## 18. CITIES AND TOWNS WHERE JEE (ADVANCED) 2015 WILL BE HELD

JEE (Advanced) 2015 will be held in select cities and towns in India and in Dubai, United Arab Emirates. Candidates should compulsorily choose three cities / towns from a zone of their choice at the time of online registration. Efforts will be made to allot the city / town of candidate's choice but a different city / town in the same zone may be allotted under exceptional circumstances. Request for change of city / town will **NOT** be entertained under any circumstance.

## CITIES AND TOWNS WHERE JEE (ADVANCED) 2015 WILL BE HELD

### IIT BOMBAY ZONE

| City/Town | Code |
|---|---|
| **GOA** | |
| Panaji | 101 |
| **GUJARAT** | |
| Ahmedabad | 102 |
| Rajkot | 103 |
| Surat | 104 |
| Vadodara | 105 |
| **MAHARASHTRA** | |
| Mumbai | 106 |
| Nagpur | 107 |
| Navi Mumbai | 108 |
| Pune | 109 |
| **RAJASTHAN** | |
| Ajmer | 110 |
| Jaipur | 111 |
| Jodhpur | 112 |

### IIT DELHI ZONE

| City/Town | Code |
|---|---|
| **DELHI** | |
| Delhi (East) | 201 |
| Delhi (West) | 202 |
| Delhi (North) | 203 |
| Delhi (South) | 204 |
| Delhi (Central) | 205 |
| **HARYANA** | |
| Faridabad | 206 |
| Gurgaon | 207 |
| **JAMMU and KASHMIR** | |
| Jammu | 208 |
| **MADHYA PRADESH** | |
| Indore | 209 |
| **RAJASTHAN** | |
| Sikar | 210 |
| Udaipur | 211 |
| **UTTAR PRADESH** | |
| Aligarh | 212 |
| Mathura | 213 |

### IIT GUWAHATI ZONE

| City/Town | Code |
|---|---|
| **ARUNACHAL PRADESH** | |
| Itanagar | 301 |
| **ASSAM** | |
| Guwahati | 302 |
| Jorhat | 303 |
| Silchar | 304 |
| **BIHAR** | |
| Gaya | 305 |
| Katihar | 306 |
| Muzaffarpur | 307 |
| Patna | 308 |
| **MANIPUR** | |
| Imphal | 309 |
| **MEGHALAYA** | |
| Shillong | 310 |
| **WEST BENGAL** | |
| Siliguri | 311 |
| **UAE** | |
| Dubai | 312 |

### IIT KANPUR ZONE

| City/Town | Code |
|---|---|
| **MADHYA PRADESH** | |
| Bhopal | 401 |
| Gwalior | 402 |
| Jabalpur | 403 |
| **UTTARAKHAND** | |
| Haldwani | 404 |
| **UTTAR PRADESH** | |
| Agra | 405 |
| Allahabad | 406 |
| Gorakhpur | 407 |
| Jhansi | 408 |
| Kanpur | 409 |
| Lucknow | 410 |

### IIT KHARAGPUR ZONE

| City/Town | Code |
|---|---|
| **ANDAMAN & NICOBAR ISLANDS** | |
| Port Blair | 501 |
| **ANDHRA PRADESH** | |
| Visakhapatnam | 502 |
| **CHATTISGARH** | |
| Bhilai | 503 |
| Bilaspur | 504 |
| Raipur | 505 |
| **JHARKHAND** | |
| Bokaro | 506 |
| Dhanbad | 507 |
| Jamshedpur | 508 |
| Ranchi | 509 |

| | |
|---|---|
| **ORISSA** | |
| Bhubaneswar | 510 |
| Rourkela | 511 |
| **SIKKIM** | |
| Gangtok | 512 |
| **TRIPURA** | |
| Agartala | 513 |
| **WEST BENGAL** | |
| Durgapur | 514 |
| Kharagpur | 515 |
| Kolkata (North) | 516 |
| Kolkata (Salt Lake) | 517 |
| Kolkata (South) | 518 |
| Malda | 519 |

## IIT MADRAS ZONE

| City/Town | Code |
|---|---|
| **ANDHRA PRADESH** | |
| Nellore | 601 |
| Vijayawada | 602 |
| **TELENGANA** | |
| Hyderabad | 603 |
| Warangal | 604 |
| **KARNATAKA** | |
| Bangalore | 605 |
| Mangalore | 606 |
| **KERALA** | |
| Kochi | 607 |
| Kozhikode | 608 |
| Thiruvananthapuram | 609 |
| **PUDUCHERRY** | |
| Puducherry | 610 |
| **TAMIL NADU** | |
| Chennai | 611 |
| Madurai | 612 |

## IIT ROORKEE ZONE

| City/Town | Code |
|---|---|
| **CHANDIGARH** | |
| Chandigarh | 701 |
| **HARYANA** | |
| Ambala | 702 |
| Kurukshetra | 703 |
| Panipat | 704 |
| Rohtak | 705 |
| **HIMACHAL PRADESH** | |
| Palampur | 706 |
| Shimla | 707 |
| **PUNJAB** | |
| Amritsar | 708 |
| Bathinda | 709 |
| Jalandhar | 710 |
| Ludhiana | 711 |
| Patiala | 712 |
| **UTTARAKHAND** | |
| Dehradun | 713 |
| Haridwar | 714 |
| Roorkee | 715 |
| **UTTAR PRADESH** | |
| Bareilly | 716 |
| Gautam Budh Nagar *(Noida)* | 717 |
| Ghaziabad | 718 |
| Meerut | 719 |
| Moradabad | 720 |
| Varanasi | 721 |

## 19. DAY OF THE EXAMINATION

- Candidates must carry a printed copy of the downloaded admit card. Only candidates having a valid admit card will be allowed to write the examination. The candidates will be given the original admit card upon identity verification.
- The candidate's identity will be verified by invigilators as well as IIT representatives. If the identity of the candidate is in doubt, the candidate may not be allowed to appear for the examination. However, the authorities at their discretion may permit the candidate to appear for the examination after completing certain formalities. No extra time will be allowed for completing the examination in lieu of the time taken for completing these formalities.
- Impersonation in the examination is a serious offence and will lead to disqualification of the candidate from JEE (Advanced) 2015.
- Candidates will **NOT** be allowed to carry electronic devices (mobile phones, smart phones, calculators, iPAD, tabs, etc.), abacus, slide rule, log books, study material of any type, geometry box, etc. to the examination hall.
- Candidates have to remain in the examination hall for the entire duration of the paper i.e., candidates CANNOT leave the examination hall before 12:00 IST for Paper 1 and before 17:00 IST for Paper 2.

## 20. ONLINE DISPLAY OF ANSWER KEYS AND CANDIDATE'S ORS

- The answer keys for both Paper 1 and Paper 2 of JEE (Advanced) 2015 will be displayed on the online portal (http://jeeadv.iitb.ac.in).
- The ORS will be graded and scrutinized with extreme care. The ORS of all candidates who have appeared for both Paper 1 and Paper 2 will be displayed on the online portal, along with the machine-read responses and the marks scored.
- In case of perceived discrepancy, candidates can seek review of the machine-read responses. The requests should be submitted online. In addition, candidates should pay review-fee at the rate of ₹ 500 per question to be reviewed. The mode of payment will be same as that for the payment of registration fee and detailed instructions will be given on the online portal.

| | |
|---|---|
| Portal for display of answer keys and image and scans of candidate's ORS | http://jeeadv.iitb.ac.in |
| Display of ORS image and scanned responses | Wednesday, June 3, 2015 10:00 IST to Friday, June 5, 2015 17:00 IST |
| Request from candidates for review of their scanned responses | Wednesday, June 3, 2015 10:15 IST to Saturday, June 6, 2015 17:00 IST |
| Display of answer keys | Monday, June 8, 2015 12:00 IST |
| Receiving feedback from candidates on answer keys | Monday, June 8, 2015 12:15 IST to Thursday, June 11, 2015 17:00 IST |
| Display of marks allotted | Saturday, June 13, 2015 12:00 IST |

## 21. MERIT LISTS

- Only candidates who appear for both Paper 1 and Paper 2 will be considered for ranking.
- The marks obtained by a candidate in Physics in JEE (Advanced) 2015 will be equal to the marks scored in Physics part of Paper 1 plus the marks scored in Physics part of Paper 2. Marks obtained in Chemistry and Mathematics will be calculated in the same way.
- The aggregate marks obtained by a candidate in JEE (Advanced) 2015 is the sum of the marks awarded to him/her in Physics, Chemistry and Mathematics.
- Merit lists will be prepared based on the aggregate marks in JEE (Advanced) 2015.
- If the aggregate marks scored by two or more candidates are same, then the following tie-break policy will be used for awarding ranks:

  Higher rank will be assigned to the candidate who has obtained higher marks in Mathematics. If this does not break the tie, higher rank will be assigned to the candidate who has obtained higher marks in Physics. If there is a tie even after this, candidates will be assigned the same rank.
- Merit lists for preparatory courses (see section **25. PREPARATORY COURSES**) will be prepared only if the number of SC, ST and PwD candidates in the respective merit lists is less than 1.4 times the number of seats available in the respective categories.
- A candidate who qualifies in more than one category will be considered in all the categories to which he/she belongs for the purpose of ranking.
- There will be no waiting list for ranking.

- Only candidates who score the minimum prescribed marks in each subject in each paper and in aggregate will be included in the merit list. The minimum prescribed marks varies with the category. These are as shown in the following table.

**Minimum percentage of marks prescribed for inclusion in the merit list**

| Merit List | Minimum percentage of marks in each subject | Minimum percentage of aggregate marks |
|---|---|---|
| Common merit list | 10.0 | 35.0 |
| OBC-NCL merit list | 9.0 | 31.5 |
| SC merit list | 5.0 | 17.5 |
| ST merit list | 5.0 | 17.5 |
| GEN-PwD merit list | 5.0 | 17.5 |
| OBC-NCL-PwD merit list | 5.0 | 17.5 |
| SC-PwD merit list | 5.0 | 17.5 |
| ST-PwD merit list | 5.0 | 17.5 |
| Preparatory course merit list | 2.5 | 8.75 |

## 22. RESULTS OF JEE (ADVANCED) 2015

- Results will be declared on Thursday, June 18, 2015 10:00 IST. All India Rank (AIR) and Category Rank of successful candidates will be available on the online portal after the results are declared.
- Individual rank cards will **NOT** be sent to candidates.
- Obtaining a rank in JEE (Advanced) 2015 does not guarantee admission to IITs or ISM.

## 23. PERFORMANCE IN CLASS XII (OR EQUIVALENT) BOARD EXAMINATION

- One of the criteria for admission to IITs and ISM is that the candidate should satisfy at least one of these two criteria:

  (1) He/she is within the category-wise top 20 percentile of successful candidates in his/her respective Class XII (or equivalent) board examination.

  (2) He/she has secured 75% (for GEN or OBC-NCL) or 70% (SC, ST or PwD) of aggregate marks in the Class XII (or equivalent) board examination.

- The marks scored in the following five subjects will be considered for calculating the aggregate marks and the cut-off marks for fulfilling the top 20 percentile criterion: (1) Physics, (2) Chemistry, (3) Mathematics, (4) a language (if the candidate has taken more than one language, then the language with the higher marks will be considered), and (5) any subject other than the above four (the subject with the higher marks will be considered).

- The category-wise cut-off marks for the top 20 percentile are calculated based on the marks scored by all the "successful" candidates in their respective boards.

- The cut-off marks for PwD candidates will be the same as the lowest of the cut-off marks for GEN, OBC-NCL, SC and ST categories.

- In case any of the subjects Physics, Chemistry, Mathematics and Language are not evaluated in the final year (e.g., in a 3-year diploma course), then the marks for the same subject from the previous year will be used for calculating the top 20 percentile cut-off and percentage of aggregate marks.

- Candidates who have failed in one or more subjects in the Class XII (or equivalent) examination in 2014 will have to reappear for all the subjects in 2015.
- The top 20 percentile cut-off marks of the respective Boards in 2014 will be considered for candidates who pass the Class XII (or equivalent) examination in 2014.
- The top 20 percentile cut-off marks of the respective Boards in 2015 will be considered for candidates who pass the Class XII (or equivalent) examination in 2015 and for those who appeared in 2014 but reappeared in all subjects in 2015 to improve the performance.
- In case a Board does not provide information about the cut-off for the top 20 percentile, the candidate will have to produce a certificate from the respective Board stating that he/she falls within the top 20 percentile of successful candidates. If the candidate fails to do so, then the cut-off marks for the CBSE will be used.
- If a 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 online acceptance of the allocated seat. In case such a certificate is not provided, the decision taken by the Joint Implementation Committee of JEE (Advanced) 2015 will be final.
- If a Board gives aggregate marks considering both Class XI and Class XII examinations (in the 10+2 system), then only the Class XII marks will be considered. If a Board gives aggregate marks considering the results of all three years of a 3-year diploma or courses of equivalent duration, then only the marks scored in the final year will be considered. Similarly, for Boards

which follow a semester system, the marks scored in the final two semesters will be considered.

- If a Board does not give marks scored in individual subjects but gives only the aggregate marks, then the aggregate marks given by the Board will be considered as such.
- The criteria, as specified above, is applicable "in toto" to all the candidates including foreign nationals.

**24. FILLING-IN OF CHOICES (FORMERLY COUNSELLING)**

- Instructions to be followed for filling-in the choice of Institutes and courses will be made available on the online portal at the time the results are declared.
- The list of courses that will be offered by the IITs and ISM for admission for the academic year 2015-16 will be made available at the time of online filling-in of choices.

**25. PREPARATORY COURSES**

- All the sixteen IITs and ISM run preparatory courses of one year duration for SC, ST and PwD candidates.
- In case the seats reserved for SC, ST and PwD candidates are not filled completely, a limited number of candidates are admitted to a preparatory course of one-year duration on the basis of further relaxation of admission criteria (see **21. MERIT LISTS**).
- Admission is given to the candidates in the preparatory course provided (i) the seats reserved for the respective category are vacant, (ii) candidates

satisfy minimum norms, and (iii) candidates have not undergone the preparatory course earlier.

- On successful completion of the course, the students will be offered direct admission in July 2016 (Academic Year 2016-17) to the already allotted undergraduate course.
- Candidates admitted to the preparatory course are also eligible to appear for JEE (Advanced) 2016 subject to fulfilling other eligibility criteria.
- Filling-in of choices for preparatory courses is also through the same online portal.

**26. ADDITIONAL REQUIREMENTS FOR CERTAIN COURSES**

- Those who opt for Mining Engineering, Mining Machinery Engineering, Integrated M.Sc. program in Geology or Geophysics, or Petroleum Engineering should not have any form of colour blindness. A certificate to this effect from a registered medical practitioner has to be uploaded at the time of filling-in of choices.
- 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 these limitations are not allowed to opt for admission to Mining Engineering and Mining Machinery Engineering.

## 27. 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 or Mining Machinery Engineering at ISM, Dhanbad. The corresponding courses at IIT Kharagpur and IIT (BHU) do **NOT** have such a restriction.

## 28. ARCHITECTURE APTITUDE TEST FOR B. ARCH. PROGRAM

- Candidates desirous of joining the B. Arch. (Architecture) courses will have to PASS the Architecture Aptitude Test (AAT). Only those candidates who have secured an all India / category rank in JEE (Advanced) 2015 are eligible to appear for AAT in 2015.
- Syllabus for AAT is given in **30. SYLLABI.**
- Only those candidates who are desirous of opting for the B. Arch. program available at IIT Kharagpur and IIT Roorkee as one of the choices while filling-in their choices online will be eligible to write AAT.
- Candidates must register online at the JEE (Advanced) 2015 online portal for AAT.
- AAT will be conducted only at the seven zonal IITs.
- The test will consist of one paper of three hours duration.
- The question paper for AAT will be available only in English language.

- No separate admit card will be issued for AAT. The original admit card of JEE (Advanced) 2015 should be produced in the AAT examination hall.
- Candidates should bring their own drawing and colouring aids.
- The Joint Implementation Committee of JEE (Advanced) 2015 will decide the cut-off marks for passing AAT.
- Results of AAT will be declared on the JEE (Advanced) 2015 online portal.
- Candidates securing marks above the cut-off will be declared as 'passing' the test. There is no separate ranking in the AAT. There is no separate cut-off for students of any category.
- Allotment of seat will be solely based on the category-wise All India Rank in the JEE (Advanced) 2015.

| | |
|---|---|
| Portal for registering for AAT | http://jeeadv.iitb.ac.in |
| Registration for AAT | Thursday, June 18, 2015 10:00 IST to Friday, June 19, 2015 17:00 IST |
| Day, date and time of AAT | Sunday, June 21, 2015 09:00 to 12:00 IST |
| Declaration of results of AAT | Thursday, June 25, 2015 10:00 IST |

## 29. OTHER INSTISTUTES WHICH USE JEE (ADVANCED) 2015 RANKS

The ranks of JEE (Advanced) 2015 may be used by other institutes for admissions to their courses / programs. Some of the Institutes which have used JEE (Advanced) ranks in the recent past are

- Indian Institute of Science, Bengaluru (IISc)
- Indian Institutes of Science Education and Research (IISERs) located in Bhopal, Mohali, Kolkata, Pune and Thiruvananthapuram

- Indian Institute of Space Science and Technology, Tiruvananthapuram (IIST)
- Rajiv Gandhi Institute of Petroleum Technology, Rae Bareli (RGIPT)

Candidates should contact these institutes directly for additional information.

## 30. SYLLABI

### 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 $\Delta G^0$ 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 $Fe^{2+}$, $Cu^{2+}$ and $Zn^{2+}$; 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 $Ag^{+}$, $Hg^{2+}$, $Cu^{2+}$, $Pb^{2+}$, $Bi^{3+}$, $Fe^{3+}$, $Cr^{3+}$, $Al^{3+}$, $Ca^{2+}$, $Ba^{2+}$, $Zn^{2+}$, $Mn^{2+}$ and $Mg^{2+}$); 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 $KMnO_4$ and ozone; Reduction of alkenes and alkynes; Preparation of alkenes and alkynes by elimination reactions; Electrophilic addition

reactions of alkenes with $X_2$, HX, HOX and $H_2O$ (X=halogen); 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 di-saccharides (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

## ARCHITECTURE APTITUDE TEST

### 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.

## 31. FORMATS FOR CERTIFICATES

In what follows, the formats for the various documents / certificates that have to be uploaded at the time of Registration for JEE (Advanced) 2015 and filling-in of choices after the declaration of results are given.

## 32. LIST OF COURSES OFFERED BY IITs AND ISM IN 2014

The courses offered by IITs and ISM in 2014 are tabulated and are placed after the formats / forms. Courses indicated as (Hons.) are Honors courses. Some of the courses have additional requirements and these are marked as AR.

The courses to be offered by the various Institutes in 2015 may vary. A few of the courses offered in 2014 may not be offered at all or may be modified (course title and/or content). It is also possible that a few new courses will be offered. The additional requirements may also change. The final list will be made available at the time of filling-in choices for seat allocation.

# SC/ST Certificate Format

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

1. This is to certify that Shri/ Shrimati/ 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

The term “ordinarily reside(s)**” used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.

Officers competent to issue Caste/Tribe certificates:

1. 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.
2. Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
3. Revenue Officers not below the rank of Tehsildar.
4. Sub-divisional Officer of the area where the candidate and/ or his family normally reside(s).
5. Administrator / Secretary to Administrator / Development Officer (Lakshdweep Island).
6. Certificate issued by any other authority will be rejected.

**FORM EC2**

# OBC (NCL) Certificate Format

## FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES (NCL) 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, further modified vide OM No. 36033/3/2004-Estt. (Res.) dated 14/10/2008 or the latest notification of the Government of India.

Dated:

District Magistrate /
Deputy Commissioner /
Competent Authority

Seal

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

**NOTE:**

(a) The term 'Ordinarily resides' 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.

**FORM EC3**

**FORM OF MEDICAL CERTIFICATE FOR PERSONS WITH DISABILITIES (PwD)**
**NAME AND ADDRESS OF THE INSTITUTE/HOSPITAL**

Certificate No. _____ Date: _____

**DISABILITY CERTIFICATE**

1. This is to certify that Smt/Shri/Kum _____-- son/daughter of Shri _____ age _____ Male/Female having identification marks as below: _____
is suffering from permanent disability of following category:

Paste here your recent colour photograph showing the disability (The photograph should be attested by the Chairperson of the Medical Board)

Signature of the candidate

A. Locomotor or cerebral palsy:
(i) BL – Both legs affected but not arms.
(ii) BA- Both arms affected : a) Impaired reach b) Weakness of grip
(iii) OL-One leg affected (right or left): a) Impaired reach b) Weakness of grip c) Ataxic
(iv) OA- One arm affected (right or left): a) Impaired reach b) Weakness of grip c) Ataxic
(v) BH- Stiff Back and hips (cannot sit or stoop)
(vi) MW- Muscular Weakness and limited physical endurance.

B. Blindness or Low Vision : (i) B-Blind (ii) PB- Partially Blind
C. Hearing Impairment: (i) D-Deaf (ii) PD- Partially Deaf.
(Delete the category whichever is not applicable)

2. This condition is progressive/non-progressive/likely to improve/ not likely to improve.Re-assessment of this case is not recommended/ recommended after a period _____ years _____months.

3. Percentage of disability in his/ her case is _____ Percent.

4. Smt./Shri/Kum _____ meets the following physical requirement for discharge of his/her duties.

| | | | | |
|---|---|---|---|---|
| (i) F-can perform work by manipulating with fingers | Yes | | No | |
| (ii) PP-can perform work by pulling and pushing | Yes | | No | |
| (iii) L--can perform work by lifting | Yes | | No | |
| (iv) KC-can perform work by kneeling and crouching | Yes | | No | |
| (v) B-can perform work by bending | Yes | | No | |
| (vi) S-can perform work by sitting | Yes | | No | |
| (vii) ST-can perform work by standing | Yes | | No | |
| (viii) W-can perform work by walking | Yes | | No | |
| (ix) SE-can perform work by seeing | Yes | | No | |
| (x) H-can perform work by hearing/speaking | Yes | | No | |
| (xi) RW-can perform work by reading and writing | Yes | | No | |

| | | |
|---|---|---|
| (Signature of Doctor) | (Signature of Doctor) | (Signature of Doctor) |
| Name: | Name: | Name: |
| Registration No.: | Registration No.: | Registration No.: |
| Member Medical Board | Member Medical Board | Member Chairperson, Medical Board |

*Please delete the words which are not applicable

Place: Date:

**Counter Signature of the Medical Superintendent/CMO/Head of Hospital (with seal)**

Note : **(i)** According to the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full participation) Rules, 1996 notified on 31.12.1996 by the Central Government in exercise of the powers conferred by sub-section (1) and (2) of Section 73 of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 (1 of 1996), authorities to give disability Certificate will be a Medical Board duly constituted by the Central or the State Government. The State Government may constitute a Medical Board consisting of at least three members out of whom at least one shall be a specialist in the particular field for assessing locomotor/hearing & speech disability, mental retardation and leprosy cured, as the case may be. **(ii)** The certificate would be valid for a period of 5 years for those whose disability is temporary. For those who acquired permanent disability, the validity can be shown as permanent.

**FORM EC4**

PROFORMA

EDUCATION SCHOLARSHIP-ENTITLEMENT CARD
(To children of Armed Forces personnel killed/disabled/missing in wars/CI Operations)

The holder of this card Shri/Kum _____
Born on _____is the son/daughter of Shri/Smt _____
Rank_____of Unit_____ Service_____
Service No._____killed in action/permanently disabled/missing on_____ during_____(Name of War/ Operation)

Name of the Guardian_____
_____
_____
Address_____
_____
_____
_____

The holder is eligible for all educational concessions sanctioned by Central Government for children of Armed Forces personnel killed, missing or permanently disabled in wars/ CI Operations.

Signature of the authorized Officer
Office Address:

*(In case of officers, Entitlement Card for Education Scholarship should be obtained from AG/MP-59B, Army HQ, New Delhi-11, and for Personnel Below Officer Rank (PBOR) the same be obtained from the respective Record Offices.)*

**FORM EC5**

## FORMAT OF REQUEST LETTER FOR SCRIBE AND EXTRA TIME FOR PwD CANDIDATES

From

Date:

Name of the candidate

Address:_____
_____
_____
:

Application Number of JEE(Main) 2015:

Application Number of JEE (Advanced) 2015:

Mobile: Email:

The Chairman
JEE (Advanced) 2015
Indian Insitute of Technology, Bombay/ Delhi/ Guwahati/ Kanpur/ Kharagpur/ Madras/ Roorkee (Tick Appropriate Zone)

Dear Sir,

Subject: Requirement of SCRIBE and EXTRA TIME

I am a PwD candidate (Visually impaired/ dyslexic/ disability in the upper limbs or loss of fingers). I would like to use the service of a scribe for writing JEE (Advanced) 2015. I also request you to provide extra time to complete the paper as per the government norms. Kindly do the needful.

Thanking you,

_____ _____

**Signature of the candidate**

Signature of the Parent/Guardian
(Name of the Parent/Guardian)

**Enclosure: Attested copy of PwD Certificates (FORM EC3) issued by competent authority.**

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **B.Tech. (4 Years)** | | | | | | | | | | | | | | | | | |
| 1 | Aerospace Engineering | • | | | | | | | | | • | (Hons.) | • | | | | | |
| 2 | Agricultural & Food Engineering | | | | | | | | | | | (Hons.) | | | | | | |
| 3 | Biological Sciences and Bioengineering | | | | | | | | | | • | | | | | | | |
| 4 | Biologically -inspired Systems Science | | | | | | | | | • | | | | | | | | |
| 5 | Biotechnology | | | | | • | | | | | | | | | | • | | |
| 6 | Biotechnology & Biochemical Engineering | | | | • | | | | | | | (Hons.) | | | | | | |
| 7 | Ceramic Engineering | | | • | | | | | | | | | | | | | | |
| 8 | Chemical Engineering | • | | • | • | • | • | • | | | • | (Hons.) | • | | | • | | • |
| 9 | Chemical Science and Technology | | | | | • | | | | | | | | | • | | | |
| 10 | Civil & Infrastructure Engineering | | | | | | | | | | | | | | • | | | |
| 11 | Civil Engineering | • | • | • | • | • | • | • | | | • | (Hons.) | • | | | • | | • |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | Computer Science & Engineering | • | • | • | • | • | | • | • | • | • | (Hons.) | • | • | • | • | • | • |
| 13 | Electrical Engineering | • | • | • | • | | • | • | • | • | • | (Hons.) | • | • | • | • | • | • |
| 14 | Electrical Engineering (Power & Automation) | | | | • | | | | | | | | | | | | | |
| 15 | Electronics & Communication Engineering | | | | | • | | | | | | | | | | • | | • |
| 16 | Electronics & Electrical Communication Engineering | | | | | | | | | | | (Hons.) | | | | | | |
| 17 | Electronics & Electrical Engineering | | | | | • | | | | | | | | | | | | |
| 18 | Electronics & Instrumentation Engineering | | | | | | | | | | | | | | | | | • |
| 19 | Electronics Engineering | | | • | | | | | | | | | | | | | | |
| 20 | Engineering Physics | • | | | • | • | | • | | | | | • | | | | | • |
| 21 | Engineering Science | | | | | | | • | | | | | | | | | | |
| 22 | Environmental Engineering | | | | | | | | | | | | | | | | | • |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | Industrial Engineering | | | | | | | | | | | (Hons.) | | | | | | |
| 24 | Instrumentation Engineering | | | | | | | | | | | (Hons.) | | | | | | |
| 25 | Manufacturing Science and Engineering | | | | | | | | | | | (Hons.) | | | | | | |
| 26 | Materials Science and Engineering | | | | | | • | | | | • | | | | | | | |
| 27 | Mathematics and Computing | | | | • | • | | | | | | | | | | | | |
| 28 | Mechanical Engineering | • | • | • | • | • | • | • | • | • | • | (Hons.) | • | • | • | • | • | • |
| 29 | Metallurgical & Materials Engineering | | • | | | | | | | | | (Hons.) | • | | | • | | |
| 30 | Metallurgical Engineering | | | • | | | | | | | | | | | | | | |
| 31 | Metallurgical Engineering & Materials Science | • | | | | | | • | | | | | | | | | | |
| 32 | Mineral Engineering | | | | | | | | | | | | | | | | | • |
| 33 | Mining Engineering | | | • | | | | | | | | (Hons.) (AR) | | | | | | AR |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | Mining Machinery Engineering | | | | | | | | | | | | | | | | | AR |
| 35 | Naval Architecture & Ocean Engineering | | | | | | | | | | | | • | | | | | |
| 36 | Ocean Engineering & Naval Architecture | | | | | | | | | | | (Hons.) | | | | | | |
| 37 | Petroleum Engineering | | | | | | | | | | | | | | | | | AR |
| 38 | Polymer Science & Technology | | | | | | | | | | | | | | | • | | |
| 39 | Production and Industrial Engineering | | | | • | | | | | | | | | | | • | | |
| 40 | Systems Science | | | | | | | | | • | | | | | | | | |
| 41 | Textile Technology | | | | • | | | | | | | | | | | | | |
| | **B.S. Courses(4 Years)** | | | | | | | | | | | | | | | | | |
| 42 | Chemistry | • | | | | | | | | | • | | | | | | | |
| 43 | Economics | | | | | | | | | | • | | | | | | | |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44 | Mathematics and Scientific Computing | | | | | | | | | | • | | | | | | | |
| 45 | Physics | | | | | | | | | | • | | | | | | | |
| | **B. Pharm. (4 Years)** | | | | | | | | | | | | | | | | | |
| 46 | Pharmaceutics | | | • | | | | | | | | | | | | | | |
| | **B. Des. (4 Years)** | | | | | | | | | | | | | | | | | |
| 47 | Design | | | | | • | | | | | | | | | | | | |
| | **B.Tech.-M.Tech. Dual Degree (5 years)** | | | | | | | | | | | | | | | | | |
| 48 | Aerospace Engineering | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | • | | | | | |
| 49 | Aerospace Engineering with M.Tech. in Applied Mechanics with specializations in Biomedical Engineering | | | | | | | | | | | | • | | | | | |
| 50 | Agricultural and Food Engineering with M.Tech in any of the listed specializations | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | |
| 51 | Biochemical Engineering | | | • | | | | | | | | | | | | | | |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52 | Biological Engineering | | | | | | | | | | | | • | | | | | |
| 53 | Biochemical Engineering & Biotechnology | | | | • | | | | | | | | | | | | | |
| 54 | Bioengineering with M.Tech. in Biomedical Technology | | | • | | | | | | | | | | | | | | |
| 55 | Biotechnology & Biochemical Engineering | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | |
| 56 | Ceramic Engineering | | | • | | | | | | | | | | | | | | |
| 57 | Chemical Engineering | | | | • | | | | | | | B.Tech. (Hons.) + M.Tech. | • | | | | | |
| 58 | Civil Engineering with M. Tech. in Applied Mechanics in any of the listed specialization | | | | | | | | | | | | • | | | | | |
| 59 | Civil Engineering with M. Tech. in Infrastructural Civil Engineering | | | | | | | | | | | | • | | | | | |
| 60 | Civil Engineering with M. Tech. in Structural Engineering | | | • | | | | | | | | | | | | | | |
| 61 | Civil Engineering with M. Tech. in any of the listed specialization | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | • | | | | | |
| 62 | Computer Science & Engineering | | | • | • | | | | | | | B.Tech. (Hons.) + M.Tech. | • | | | | | • |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63 | Electrical Engineering with M. Tech. in Applied Mechanics with specialization in | | | | | | | | | | | | • | | | | | |
| 64 | Electrical Engineering with M. Tech. in communication and Signal Processing | • | | | | | | | | | | | | | | | | |
| 65 | Electrical Engineering | | | | | | | | | | | | • | | | | | |
| 66 | Electrical Engineering with M. Tech. in Microelectronics | • | | | | | | | | | | | | | | | | |
| 67 | Electrical Engineering with M. Tech. in any of the listed specializations | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | | |
| 68 | Electrical Engineering with M.Tech. in Power Electronics | | | • | | | | | | | | | | | | | | |
| 69 | Electronics & Electrical Communication Engineering with M. Tech. in any of the listed specializations | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | | |
| 70 | Energy Engineering with M.Tech in Energy Systems Engineering | • | | | | | | | | | | | | | | | | |
| 71 | Engineering Design with M. Tech. in Automotive Engineering | | | | | | | | | | | | • | | | | | |
| 72 | Engineering Design with M.Tech in Biomedical Design | | | | | | | | | | | | • | | | | | |
| 73 | Quality Engineering Design and Manufacturing | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | | |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 74 | Engineering Physics with M.Tech in Engineering Physics with specialization in Nano Science | • | | | | | | | | | | | | | | | | |
| 75 | Industrial Engineering with M. Tech. in Industrial Engineering and Management | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | |
| 76 | Manufacturing Science & Engineering with M. Tech. in Industrial Engineering & Management | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | |
| 77 | Material Science & Technology | | | • | | | | | | | | | | | | | | |
| 78 | Mathematics and Computing | | | | • | | | | | | | | | | | | | |
| 79 | Mechanical Engineering | | | • | | | | | | | | | | | | | | |
| 80 | Mechanical Engineering with M. Tech. in Computer Integrated Manufacturing | • | | | | | | | | | | | | | | | | |
| 81 | Mechanical Engineering with M. Tech. In Thermal Engineering | | | | | | | | | | | | • | | | | | |
| 82 | Mechanical Engineering with M. Tech. in Intelligent Manufacturing | | | | | | | | | | | | • | | | | | |
| 83 | Mechanical Engineering with M. Tech. in Product Design | | | | | | | | | | | | • | | | | | |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84 | Mechanical Engineering with M. Tech. in any of the listed specialization | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | |
| 85 | Metallurgical Engineering | | | • | | | | | | | | | | | | | | |
| 86 | Metallurgical Engineering & Materials Science with M. Tech. in Ceramics &Composites | • | | | | | | | | | | | | | | | | |
| 87 | Metallurgical Engineering & Materials Science with M. Tech. in Metallurgical Process Engineering | • | | | | | | | | | | | | | | | | |
| 88 | Metallurgical & Materials Engineering | | | | | | | | | | | | • | | | | | |
| 89 | Metallurgical & Materials Engineering with M. Tech. in Metallurgical & Materials Engineering | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | |
| 90 | Mineral Engineering with M.Tech. in Mineral Engineering | | | | | | | | | | | | | | | | | • |
| 91 | Mining Engineering | | | AR | | | | | | | | B.Tech. (Hons.) + M.Tech. (AR) | | | | | | • |
| 92 | Mining Safety Engineering | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. (AR) | | | | | | |
| 93 | Naval Architecture & Ocean Engineering | | | | | | | | | | | | • | | | | | |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 94 | Naval Architecture Engineering with M.Tech. in Applied Mechanics in any of the listed | | | | | | | | | | | | • | | | | | |
| 95 | Ocean Engineering & Naval Architecture | | | | | | | | | | | B.Tech. (Hons.) + M.Tech. | | | | | | |
| | **B.S. & M.S. Dual Degree (5 Years)** | | | | | | | | | | | | | | | | | |
| 96 | Physics | | | | | | | | | | | | • | | | | | |
| 97 | Biological Sciences | | | | | | | | | | | | • | | | | | |
| | **B.Tech.-M.B.A. Dual Degree (5 years)** | | | | | | | | | | | | | | | | | |
| 98 | Process Engineering with MBA | | | | | | | | | | | | | | | • | | |
| | **M.Tech. Integrated (5 Years)** | | | | | | | | | | | | | | | | | |
| 99 | Geological Technology | | | | | | | | | | | | | | | • | | |
| 100 | Geophysical Technology | | | | | | | | | | | | | | | • | | |
| 101 | Engineering Physics | | | • | | | | | | | | | | | | | | |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 102 | Industrial Chemistry | | | • | | | | | | | | | | | | | | |
| 103 | Mathematics & Computing | | | • | | | | | | | | | | | | | | • |
| | **M.Sc. Tech. Integrated (5 Years)** | | | | | | | | | | | | | | | | | |
| 104 | Applied Geology | | | | | | | | | | | | | | | | | AR |
| 105 | Applied Geophysics | | | | | | | | | | | | | | | | | • |
| | **M.Sc. Integrated (5 Years)** | | | | | | | | | | | | | | | | | |
| 106 | Applied Geology | | | | | | | | | | | AR | | | | | | |
| 107 | Applied Mathematics | | | | | | | | | | | | | | | • | | |
| 108 | Chemistry | | | | | | | | | | | • | | | | | | |
| 109 | Economics | | | | | | | | | | | • | | | | | | |
| 110 | Exploration Geophysics | | | | | | | | | | | AR | | | | | | |

| Sr. | Programme | IITB | IITBBS | IITBHU | IITD | IITG | IITGN | IITH | IITI | IITJ | IITK | IITKGP | IITM | IIT Mandi | IITP | IITR | IITRPR | ISMD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 111 | Mathematics and Computing | | | | | | | | | | | • | | | | | | |
| 112 | Physics | | | | | | | | | | | • | | | | • | | |
| | **Integrated Dual Degree M. Pharm.(5 Years)** | | | | | | | | | | | | | | | | | |
| 113 | Pharmaceutics | | | • | | | | | | | | | | | | | | |
| | **B. Arch.(Hons.) (5 Years)** | | | | | | | | | | | | | | | | | |
| 114 | Architecture | | | | | | | | | | | • | | | | • | | |

## IMPORTANT DATES

| | |
|---|---|
| Online registration for JEE (Advanced) 2015 | May 2-7, 2015 |
| Downloading of admit cards | May 9-12, 2015 |
| Rectification of discrepancies, if any, in admit cards | By May 14, 2015 |
| JEE (Advanced) 2015 examination | May 24, 2015 |
| Online display of ORS | June 3-5, 2015 |
| Requests for review of responses | June 3-6, 2015 |
| Online display of answer keys | June 8, 2015 |
| Feedback from candidates on answer keys | June 8-11, 2015 |
| Online display of marks allotted | June 13, 2015 |
| Declaration of JEE (Advanced) 2015 results | June 18, 2015 |
| Online registration for architecture aptitude test | June 18-19, 2015 |
| Architecture aptitude test | June 21, 2015 |
| Online declaration of results of architecture aptitude test | June 25, 2015 |
| Online filling-in of choices | June 26-30, 2015 |
| Seat allocation ($1^{st}$ round) | July 2, 2015 |
| Acceptance of seats ($1^{st}$ round) | July 2-8, 2015 |
| Seat allocation ($2^{nd}$ round) | July 10, 2015 |
| Acceptance of seats ($2^{nd}$ round) | July 11-15, 2015 |
| First semester session begins | July 16 onwards |

# CONTACT DETAILS OF ZONAL IITs

| Institute | Address for Communication | Website | E-mail | STD Code | Telephone | Facsimile |
|---|---|---|---|---|---|---|
| **IIT Bombay** | Organizing Chairman,<br>JEE (Advanced) 2015,<br>Indian Institute of Technology Bombay,<br>Powai, Mumbai 400076 | http://jeeadv.iitb.ac.in | jee.office@iitb.ac.in | 022 | 25769093 | 25720305 |
| **IIT Delhi** | Chairman,<br>JEE (Advanced) 2015,<br>Indian Institute of Technology Delhi,<br>Hauz Khas, New Delhi 110016 | http://jeeadv.iitd.ac.in | jee@admin.iitd.ac.in | 011 | 26591785 | 26581067 |
| **IIT Guwahati** | Chairman,<br>JEE (Advanced) 2015,<br>Indian Institute of Technology Guwahati,<br>Guwahati 781039 | http://jeeadv.iitg.ac.in | jee@iitg.ernet.in | 0361 | 2692795 | 2582180 |
| **IIT Kanpur** | Chairman,<br>JEE (Advanced) 2015,<br>Indian Institute of Technology Kanpur,<br>Kanpur 208016 | http://jeeadv.iitk.ac.in | jee@iitk.ac.in | 0512 | 2597335 | 2590103 |
| **IIT Kharagpur** | Chairman,<br>JEE (Advanced) 2015,<br>Indian Institute of Technology Kharagpur,<br>Kharagpur 721032 | http://jeeadv.iitkgp.ac.in | jeeadv@iitkgp.ac.in | 03222 | 282102 | 278242 |
| **IIT Madras** | Chairman,<br>JEE (Advanced) 2015,<br>Indian Institute of Technology Madras,<br>Chennai 600036 | http://jeeadv.iitm.ac.in | jeeadv@iitm.ac.in | 044 | 22578220 | 22578224 |
| **IIT Roorkee** | Chairman,<br>JEE (Advanced) 2015,<br>Indian Institute of Technology Roorkee,<br>Roorkee 247667 | http://jeeadv.iitr.ac.in | jeech@iitr.ac.in | 01332 | 284272 | 285346 |