

# Information Brochure

## JEE (Advanced) 2019

Organizing Institute



IIT Roorkee



भारतीय प्रौद्योगिकी  
संस्थान जम्मू  
INDIAN INSTITUTE OF  
TECHNOLOGY JAMMU



भारतीय प्रौद्योगिकी संस्थान तिरुपति  
TIRUPATI



© JEE (Advanced) 2019.

The information contained in the document is for the public. All rights are reserved. Addition, deletion or modification of the document in any form is not permitted.

## CONTENTS

<b>PART-I: THE INSTITUTES</b>		
1	Indian Institutes of Technology	3
2	Academic Programs	5
3	Reservation of Seats	6
4	Defence Service Candidates	8
5	Foreign Nationals	8
6	Supernumerary Seats for Female Candidates	9
7	Other Institutes	9
<b>PART-II: THE EXAMINATION</b>		
8	The Examination	11
9	Schedule of JEE (Advanced) 2019	11
10	JEE (Main) 2019	11
11	Eligibility Criteria for Appearing in JEE (Advanced) 2019	12
12	Registration for JEE (Advanced) 2019	14
13	Registration Fee for JEE (Advanced) 2019	15
14	Services of a Scribe	16
15	Documents Required for Registration	17
16	Admit Card	19
17	Question Papers	20
18	Mode of Examination	21
19	Cities and Towns where JEE (Advanced) 2019 will be held	25
20	Important Instructions	29
21	Transmission of Candidate Responses and Online Display of Answer Keys	30
22	Rank Lists	30
23	Results of JEE (Advanced) 2019	32
24	Architecture Aptitude Test for B. Arch. Program	32
<b>PART-III: ADMISSION</b>		
25	Examinations Considered as Equivalent to Class XII	35
26	Performance in Class XII (or Equivalent) Board Examination	36
27	Joint Seat Allocation	39
28	Preparatory Courses	39
29	Additional Requirements for Certain Courses	40
30	Gender Restriction for Mining Courses	41
31	List of Courses Offered by IITs in the Academic Year 2018-19	41
32	Grievances	41
	Annexure-I: Syllabi	42
	Annexure-II: Certificate Formats	57
	Annexure-III: Courses Offered in the Academic Year 2018-19	72
	Annexure-IV: Important Dates	78
	Annexure-V: Contact Details of Zone-wise IITs	79

# Part-I

# THE INSTITUTES

## 1. Indian Institutes of Technology

Indian Institutes of Technology (IITs) 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 considerable impact on all sections of the society. At present, there are twenty-three IITs across the country.

The primary objectives of IITs 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.

Admission into various undergraduate programs (see **2. ACADEMIC PROGRAMS**) across IITs is through the Joint Entrance Examination (Advanced).

**ZONES, NAMES, LOCATIONS AND ABBREVIATIONS OF THE TWENTY-THREE IITs**

<b>Zone</b>	<b>Institute</b>	<b>City</b>	<b>Abbreviation</b>
<b>East Zone</b>	Indian Institute of Technology Kharagpur	Kharagpur	IITKGP*
	Indian Institute of Technology Bhubaneswar	Bhubaneswar	IITBBS
	Indian Institute of Technology (ISM)	Dhanbad	IIT (ISM)
<b>Central Zone</b>	Indian Institute of Technology Kanpur	Kanpur	IITK*
	Indian Institute of Technology Bhilai	Bhilai	IITBH
	Indian Institute of Technology (BHU)	Varanasi	IIT (BHU)
	Indian Institute of Technology Indore	Indore	IITI
<b>North-Central Zone</b>	Indian Institute of Technology Delhi	New Delhi	IITD*
	Indian Institute of Technology Jammu	Jammu	IITJM
	Indian Institute of Technology Jodhpur	Jodhpur	IITJ
<b>North-East Zone</b>	Indian Institute of Technology Guwahati	Guwahati	IITG*
	Indian Institute of Technology Patna	Patna	IITP
<b>North Zone</b>	Indian Institute of Technology Roorkee	Roorkee	IITR*
	Indian Institute of Technology Mandi	Mandi	IITMandi
	Indian Institute of Technology Ropar	Ropar	IITRPR
<b>South Zone</b>	Indian Institute of Technology Hyderabad	Hyderabad	IITH*
	Indian Institute of Technology Madras	Chennai	IITM
	Indian Institute of Technology Palakkad	Palakkad	IITPKD
	Indian Institute of Technology Tirupati	Tirupati	IITTP
<b>West Zone</b>	Indian Institute of Technology Bombay	Mumbai	IITB*
	Indian Institute of Technology Dharwad	Dharwad	IITDWD
	Indian Institute of Technology Gandhinagar	Gandhinagar	IITGN
	Indian Institute of Technology Goa	Goa	IITGOA

\* Zonal Coordinating IITs to conduct JEE (Advanced) 2019 examination.

## 2. ACADEMIC PROGRAMS

Through JEE (Advanced), IITs offer admission into undergraduate courses leading to a Bachelor's, Integrated Master's or Bachelor-Master Dual Degree in Engineering, Sciences or Architecture. 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 some of the IITs, students enrolled into the 4-year Bachelor's program have the option to pursue B.Tech. (Honors) and/or B.Tech. with Minors. Dual Degree students may also pursue a Minor. Further, in some IITs B. Tech. students also have the option to pursue Interdisciplinary Dual Degree, with Bachelors in parent Department and Masters in some other Department. All the above options require fulfilment of certain academic performance related criteria. The types of academic programs offered at IITs and their minimum duration are given on the next page.

However, not all the listed programs and courses are available in all the institutes. The relevant programs and courses offered in 2018 are given in **Annexure-III: COURSES OFFERED IN THE ACADEMIC YEAR 2018-19**. The programs that will be offered in 2019 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 in all the programs.

All Indian nationals who satisfy the eligibility criteria (see **Section 11**) can appear in JEE (Advanced). The successful candidates meeting the Class XII (or equivalent) performance criterion (see **Section 26**) are eligible for admission into IITs. While allotting seats, policies, as per Government of India rules, are followed depending on candidates' category and/or nationality.

**TYPE OF ACADEMIC PROGRAMS OFFERED AT IITs WITH THEIR MINIMUM DURATION\***

B.Tech.	Bachelor of Technology	4 years
B.S.	Bachelor of Science	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.-M.S.	Dual Degree Bachelor of Science and Master of Science	5 years
Integrated M.Tech.	Integrated Master of Technology	5 years
Integrated M.Sc.	Integrated Master of Science	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, viz., B.Des., M.Tech., M.Sc., M.Des., Ph.D., etc. with different admission criteria.

**3. 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:

- General category belonging to Economically Weaker Section (GEN-EWS) will be a reserved category in which the percentage of reservation can go up to 10% (this percentage has been bifurcated by individual IITs into two years and for 2019 it is coming out to be 4%). The percentage of the reservation of seats for the session 2019-20 in every course will be reflected in the seat matrix of each individual IITs. The benefit of reservation will be given only to those General category candidates who satisfy the condition given in the OM No. 20013/01/2018-BC-II dated January 17, 2019 issued by the Ministry of Social Justice and Empowerment.

- Other Backward Classes belonging to the Non-Creamy Layer (OBC-NCL) – 27% of seats in every course. OBCs should be listed in the current updated central list of OBCs ([www.ncbc.nic.in](http://www.ncbc.nic.in)). OBCs present in the state list but not covered in the central list of OBCs (as per the list in [www.ncbc.nic.in](http://www.ncbc.nic.in)) are not eligible to claim the reservation. The criteria for Non-Creamy Layer (OBC-NCL) will be as per the notification of Government of India.

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, and they will be eligible only for the OPEN seats – *the seats for which all candidates are eligible*.

- 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 (websites: <http://www.socialjustice.nic.in/> and [www.tribal.nic.in](http://www.tribal.nic.in)).

- Persons with Disability (PwD) – 5% seats in each of OPEN, GEN-EWS, OBC-NCL, SC and ST category seats.

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

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

Candidates belonging to the GEN-EWS, OBC-NCL, SC, ST and PwD categories will be declared as qualified on the basis of a relaxed criterion (see **22. RANK LISTS**).

Unfilled seats reserved under GEN-EWS and OBC-NCL category will be de-reserved to OPEN category seats. However, seats remaining vacant under the SC and ST categories shall **NOT** be de-reserved to any category. The reservation for PwD candidates is horizontal and hence, unfilled seats will be de-reserved to the respective categories i.e., unfilled SC-PwD seats will be converted to the SC category seats and so on.

The category of a candidate as entered in the database, which will be made available by the JEE Apex Board [which conducts JEE (Main) 2019 examination], will be final and requests for change of category will **NOT** be entertained.

#### **4. DEFENCE SERVICE CANDIDATES**

Defence Service (DS) 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 candidates. To avail this preferential allotment, a DS candidate must be in the Common Rank List of JEE (Advanced) 2019 (see **22. RANK LISTS**).

#### **5. FOREIGN NATIONALS**

Candidates who are **NOT** citizens of India (by birth or naturalized), do not belong to PIO/OCI category, and whose parents are not citizens of India and do not come under PIO/OCI category at the time of registering for JEE (Advanced) 2019 are treated as foreign nationals. Seats allotted to foreign nationals are supernumerary with a cap of 10% of total number of seats in every course. However, the seats allotted to PIO/OCI card holders will be under OPEN category, but not supernumerary.

Foreign nationals are outside the ambit of reservation of seats under the GEN-EWS, OBC-NCL, SC, ST and PwD categories as specified herein. The relevant information for foreign candidates is available at the following link:

<https://jeeadv.ac.in/Foreign-Candidates.html>

## **6. SUPERNUMERARY SEATS FOR FEMALE CANDIDATES**

A decision has been taken at the level of the IIT Council to, inter alia, improve the gender balance in the undergraduate programs at the IITs to at least 17% in 2019-20 by creating supernumerary seats specifically for female candidates, without any reduction in the number of seats that was made available to gender neutral candidates in the previous academic year (i.e. academic year 2018-2019). Accordingly, to achieve this objective, and in accordance with the directions of the Ministry of Human Resource Development, Government of India, supernumerary seats will thus be created and offered to female candidates for improving the gender balance in the undergraduate programs in IITs. These supernumerary seats will be offered (a) to only those female candidates who are declared qualified in JEE (Advanced) - 2019, and, (b) strictly based on the performance in JEE (Advanced) - 2019.

The reservation policy as per Government of India norms as existing at present will be applicable to these supernumerary seats as well. The detailed procedure for implementation of the above shall be set out in the Business Rules of the Joint Seat Allocation Authority, 2019.

## **7. OTHER INSTITUTES**

Some centrally funded institutes have used JEE (Advanced) ranks in the past. These include:

- Indian Institute of Science, Bangalore (IISc)
- Indian Institutes of Science Education and Research (IISERs) located in Berhampur, Bhopal, Kolkata, Mohali, Pune, Thiruvananthapuram and Tirupati
- Indian Institute of Space Science and Technology (IIST), Thiruvananthapuram
- Rajiv Gandhi Institute of Petroleum Technology (RGIPT), Rae Bareilly
- Indian Institute of Petroleum & Energy, Visakhapatnam

Candidates should contact these institutes directly for additional information regarding admission.

# Part-II

# THE EXAMINATION

## 8. THE EXAMINATION

The Joint Entrance Examination (Advanced) 2019 [JEE (Advanced) 2019] will be conducted by the seven Zonal Coordinating (ZC) IITs under the guidance of the Joint Admission Board (JAB) 2019. 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 all the IITs. The decisions of the JAB 2019 will be final in all matters related to JEE (Advanced) 2019 and admission to IITs.

## 9. SCHEDULE OF JEE (ADVANCED) 2019

The examination consists of two papers (Paper 1 and Paper 2) of three hours duration each. **Both the papers are compulsory.** The examination will be held as per the following schedule:

<b>Date of Examination</b>	<b>Monday, 27 May 2019</b>
Paper 1	09:00 IST to 12:00 IST
Paper 2	14:00 IST to 17:00 IST

It may be noted that the schedule will remain the same even if 27 May 2019 is declared a public holiday.

ONLY those PwD candidates permitted to use the services of a scribe (see **14. 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.

## 10. JEE (MAIN) 2019

Indian nationals (including PIO/OCI) who wish to appear in JEE (Advanced) 2019 must write Paper-1 of JEE (Main) 2019 which will be held in the month of January 2019 and April 2019. Further information about JEE (Main) 2019 may be obtained from the website [www.jeemain.nic.in](http://www.jeemain.nic.in).

## 11. ELIGIBILITY CRITERIA FOR INDIAN NATIONALS (including PIO/OCI) FOR APPEARING IN JEE (ADVANCED) 2019

All the candidates must fulfil **each and every one of the following five criteria** to appear in JEE (Advanced) 2019.

**Criterion 1 – Performance in JEE (Main) 2019:** Candidates should be among the top 2,45,000\* (including all categories) in Paper-1 of JEE (Main) 2019.

The percentages of various categories of candidates to be shortlisted are: 4% for GEN-EWS, 27% for OBC-NCL, 15% for SC, 7.5% for ST and the remaining 46.5% is OPEN for all. Within each of these four categories, 5% horizontal reservation is available for PwD candidates.

The following table show the order to be followed while choosing top 2,45,000\* candidates in various categories based on the performance in Paper-1 of JEE (Main) 2019.

### Category-wise distribution of top 2,45,000\* candidates (Criterion 1)

Order	Category	Number of “Top” candidates	
1	OPEN	108229	113925
2	OPEN-PwD	5696	
3	GEN-EWS	9310	9800
4	GEN-EWS-PwD	490	
5	OBC-NCL	62843	66150
6	OBC-NCL-PwD	3307	
7	SC	34913	36750
8	SC-PwD	1837	
9	ST	17456	18375
10	ST-PwD	919	

\*The total number of candidates can be slightly greater than 2,45,000 in the presence of “tied” ranks/scores in any category.

**Criterion 2 – Age limit:** Candidates should have been born on or after October 1, 1994. Five years relaxation is given to SC, ST and PwD candidates, i.e., these candidates should have been born on or after October 1, 1989.

**Criterion 3 – Number of attempts:** A candidate can attempt JEE (Advanced) maximum of two times in two consecutive years.

**Criterion 4 – Appearance in Class XII (or equivalent) examination:** A candidate should have appeared for the Class XII (or equivalent) examination for the first time in either 2018 or 2019.

However, if the examination Board of Class XII (or equivalent) declares the results for the academic year 2016-17 after June 2017, then the candidates of that board who appeared for their class XII exam in 2017 are also eligible to appear in JEE (Advanced) 2019, provided they meet the other eligibility criteria. In case, the examination Board of Class XII (or equivalent) declared the results for the academic year 2016-17 before June 2017 but the result of a particular candidate was withheld, then the candidate will not be eligible to appear in JEE (Advanced) 2019.

**Criterion 5 – Earlier admission at IITs:** A candidate should **NOT** have been admitted in an IIT irrespective of whether or not he/she continued in the program **OR** accepted an IIT seat by reporting at a reporting centre in the past. Candidates whose admission at IITs was cancelled after joining any IIT are also **NOT** eligible to appear in JEE (Advanced) 2019.

Candidates who have been admitted to a preparatory course in any of the IITs for the first time in 2018 can appear in JEE (Advanced) 2019.

The candidates who paid seat acceptance fee in 2018 but (i) did not report at any reporting centre **OR**, (ii) withdrew before the last round of seat allotment, **OR**, (iii) had their seat cancelled (for whatever reason) before the last round of seat allotment for IITs, during the joint seat allocation in 2018, are eligible to appear in JEE (Advanced) 2019.

However, in any of the above cases, the candidate is required to fulfil the conditions mentioned from Criterion 1 to Criterion 4.

**Eligibility criteria for foreign candidates can be found at:**

<https://jeeadv.ac.in/Foreign-Candidates.html>

## **12. REGISTRATION FOR JEE (ADVANCED) 2019**

**Eligibility:** All Indian nationals (including OCI/PIO) should satisfy each and every one of the five eligibility criteria [see **11. ELIGIBILITY CRITERIA FOR APPEARING IN JEE (ADVANCED) 2019**]. Registration will be cancelled if, at a later date, it is found that the candidate does not meet any of these five eligibility criteria.

**Registration Portal:** Candidates **MUST** register for appearing in JEE (Advanced) 2019. Registration is only through the online registration portal where detailed instructions for registration will be provided.

<b>Online registration portal</b>	<a href="https://jeeadv.ac.in/">https://jeeadv.ac.in/</a>
<b>Online registration begins</b>	Friday, May 3, 2019 10:00 IST
<b>Online registration closes</b>	Thursday, May 9, 2019 17:00 IST
<b>Last date for fee payment for registered candidates</b>	Friday, May 10, 2019 upto 17.00 IST

**Registration Procedure:** The procedure consists of three basic steps.

Step-1: After login, provide the basic data and the choices of the cities for the examination [See **19. CITIES AND TOWNS WHERE JEE (ADVANCED) 2019 WILL BE HELD**]. The candidate will have the option of adding an additional mobile phone number and an additional email id, in addition to the number(s) provided during JEE (Main) 2019 registration. Please note that all

the correspondence regarding JEE (Advanced) 2019 will be sent to the registered mobile number by SMS and/or to the registered email id by email.

Step-2: Upload the scanned copies of all requisite documents [See **15. DOCUMENTS REQUIRED FOR REGISTRATION**].

Step-3: Pay registration fee [See **13. REGISTRATION FEE FOR JEE (ADVANCED) 2019**]. Registration fee is **NEITHER** refundable **NOR** transferable.

Foreign Candidates may check the link: <https://jeeadv.ac.in/Foreign-Candidates.html>

### 13. REGISTRATION FEE FOR JEE (ADVANCED) 2019

	<b>Registration Fee for Examination Centres in India</b>	
<b>Indian Nationals (including PIO/OCI)</b>	Female Candidates (all categories)	INR 1300
	SC, ST, PwD Candidates	INR 1300
	All Other Candidates	INR 2600
<b>Foreign Nationals</b>	Candidates from SAARC countries	USD 75
	Candidates from Non-SAARC countries	USD 150

	<b>Registration Fee for Examination Centres in Foreign countries</b>	
<b>Indian Nationals (including PIO/OCI)</b>	All Indian Nationals	USD 75
<b>Foreign Nationals</b>	Candidates from SAARC countries	USD 75
	Candidates from Non-SAARC countries	USD 150

- The registration fee shown above **DOES NOT INCLUDE** service charges, processing fees and any other charges that the payment gateway/banks may levy.
- Detailed instructions related to the payment of registration fee will be provided at the time of JEE (Advanced) 2019 registration on the online registration portal.

#### 14. SERVICES OF A SCRIBE

- **The services of a scribe (amanuensis) are available ONLY to those PwD candidates who are visually impaired OR dyslexic OR have disability in the upper limbs or have lost fingers / hands** thereby preventing them to properly operate the Computer Based Test platform as per office memorandum of the Ministry of Social Justice and Empowerment F.No. 34-02/2015-DD-III dated August 29, 2018. PwD candidates who desire to avail the services of a scribe need to opt for this during the online registration of JEE (Advanced) 2019.
- PwD candidates permitted to use the 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.
- To avail the services of scribe, the candidate should request the Chairman, JEE (Advanced) 2019, of the respective zonal coordinating IIT in the prescribed format (FORM-SCRIBE). The requisition, along with a copy of the PwD certificate (FORM-PwD [II/III/IV, whichever is applicable]) OR a copy of the certificate of Dyslexic candidate (FORM- DYSLEXIC 1 and DYSLEXIC 2, whichever is applicable), should be uploaded at the time of online registration for JEE (Advanced) 2019. The formats for the request letter and PwD/Dyslexic certificate are given in **Annexure-II: CERTIFICATE FORMATS**.
- Zonal coordinating IITs will make arrangements, through the Presiding Officer (PO) of the Examination Centre, to provide a panel of scribes (amanuenses). Scribes will be students of Class XI from the science stream with Mathematics as one of the subject. The PwD/dyslexic candidate has to choose a scribe from this panel. The candidates will **NOT** be allowed to bring their own scribes.
- The candidate will be allowed to meet the panel of scribe one day prior to the examination i.e., on Sunday, 26 May 2019, in the presence of the IIT

Representatives (IRs), Presiding Officer (PO) and an Invigilator, and choose her/his scribe.

- **If it is found at any stage that a candidate has used the services of a scribe, and consequently availed the benefit of one extra hour, but does not possess the extent of disability that warrants the use of a scribe, she/he will be excluded from the process of evaluation, ranking and admission. In case such a candidate has already been admitted to any IIT, her/his admission will be cancelled.**

## **15. DOCUMENTS REQUIRED FOR REGISTRATION**

Given below is a list of certificates whose scanned copies are to be uploaded at the time of online registration for JEE (Advanced) 2019. The formats of the certificates, which are indicated in the brackets, are given in **Annexure-II**:

### **CERTIFICATE FORMATS.**

#### **All candidates**

- (1) Class X certificate if the date of birth is mentioned in it OR birth certificate.
- (2) Class XII (or equivalent examination) certificate (for those who appeared for this examination in 2018 or whose board declared the Class XII (or equivalent examination) result after June 2017).
- (3) If the name is not same as in the Class X certificate, gazette notification showing the change of name.

#### **For Candidates seeking admission under the GEN-EWS category**

GEN-EWS certificate (FORM-GEN-EWS) should have been issued in confirmation with the OM No. 20013/01/2018-BC-II dated January 17, 2019 issued by the Ministry of Social Justice and Empowerment and the OM No. 12-4/2019-U1 dated 17.01.2019.

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

OBC-NCL certificate (FORM-OBC-NCL) should have been issued on or after April 01, 2019 in confirmation with the latest guidelines of the Government of India. If any OBC-NCL candidate fails to collect the OBC-NCL certificate (issued after April 01, 2019) before online registration, he/she may upload a declaration (Declaration in Lieu of OBC-NCL Certificate) to that effect. Visit [www.ncbc.nic.in](http://www.ncbc.nic.in) for latest guidelines and updates on the Central List of State-wise OBCs.

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

Caste (for SC) or tribe (for ST) certificate (FORM-SC/ST), the latest guidelines of the Government of India.

**For Candidates seeking admission under the PwD category**

Physical Disability certificate (FORM-PwD II/III/IV whichever is applicable) issued by the notified medical authority.

Dyslexic candidate needs to submit FORM-DYSLEXIC 1 and 2 instead of FORM-PwD. The certificate must mention 'SEVERE' to enable the candidate get the benefit of PwD category.

Individual IITs may constitute a medical board at the time of admission to test the candidate's level of disability.

**For Candidates needing the services of a scribe**

Request letter to the Chairman of the respective zonal coordinating IIT (FORM-SCRIBE).

### **For Candidates seeking admission under the DS category**

Certificate (FORM-DS) 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, Govt. of India.

### **For PIO/OCI Card holders**

PIO card or OCI certificate, as applicable.

### **Foreign Candidates may check the link:**

<https://jeeadv.ac.in/Foreign-Candidates.html>

**For Candidates whose Class XII examination Board is outside India or not listed in Section 25** (See 25. 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.

## **16. ADMIT CARD**

- Candidates who successfully registered for JEE (Advanced) 2019 can download the admit card from the online registration portal: <https://jeeadv.ac.in/>

Portal for downloading admit card	<a href="https://jeeadv.ac.in/">https://jeeadv.ac.in/</a>
Admit card downloading schedule	Monday, May 20, 2019, 10:00 IST to Monday, May 27, 2019, 09:00 IST

- The admit card will bear the following details of the candidate: Name, Roll number for JEE (Advanced) 2019, photograph, signature, date of birth, address for correspondence and category.
- In addition, the admit card 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) 2019 of the respective zonal coordinating IIT.
- In case of any problem in downloading of the admit card, the candidate should immediately contact the Chairman, JEE (Advanced) 2019 of their respective zonal coordinating IIT.
- A copy of the downloaded admit card **MUST** be produced at the time of examination.

## 17. QUESTION PAPERS

- JEE (Advanced) 2019 will consist of two question papers: Paper 1 and Paper 2 of three hours duration each. **Both papers are compulsory.**
- Each question paper will consist of three separate sections, viz., Physics, Chemistry and Mathematics. The syllabi are given in **Annexure-I: SYLLABI**.
- The question papers will consist of objective type (multiple choice and/or numerical answer type) questions designed to test comprehension, reasoning and analytical ability of candidates.
- Negative marks may be awarded for incorrect answers of some of the questions. Details of the marking scheme will be provided in the “Instructions to Candidates” section at the time of examination.
- The candidates must carefully read and adhere to the detailed instructions given in the question papers available at the time of examination.
- The question papers will be in English and Hindi languages. The candidates will have the option to choose (and also switch between) the preferred language anytime during the examination.

## 18. MODE OF EXAMINATION

**The JEE (Advanced) 2019 examination will be conducted only in the Computer Based Test (CBT) mode.** To attain familiarity with the CBT mode candidates are advised to take mock tests available on the website <https://jeeadv.ac.in>.

Every candidate will be allotted a computer terminal (node) at the test centre. The welcome login screen for the CBT will display photograph of the candidate allotted the particular computer. For login, the candidate will have to enter his/her JEE (Advanced) 2019 roll number as login-id and enter his/her date of birth as password (e.g. if the candidate's date of birth is April 8, 2000, the password he/she need to enter would be 08042000 (**ddmmyyyy** format)).

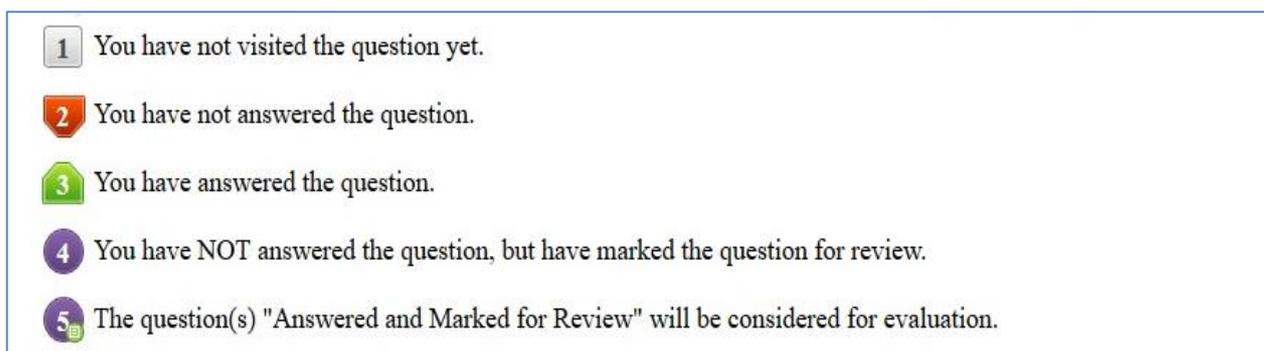
After login, the candidate would be able to see the detailed instructions for the examination. Candidates are advised to go through the instructions very carefully regarding the type of questions and marking scheme. At the designated time of start of the examination, the candidates will be able proceed and see the questions on the computer screen. Candidates will have the option to choose (and also switch/toggle between) his/her preferred language (English or Hindi) during the entire period of the examination.

The keyboard attached to the computer, if any, will be disabled during the entire duration of the examination. Depending on the type of question, the answers to questions can either be entered by clicking on the virtual on-screen keyboard (numeric or otherwise) using the computer mouse or by clicking the chosen option(s) using the computer mouse. Candidates will have the option to change/modify answers already entered anytime during the entire duration of the examination.

In case the computer/mouse allotted to any candidate malfunctions anytime during the test, he/she will be immediately allotted another computer system and the time lost due to this will be adjusted in the server so as to give the candidate the full allotted time of 3 hours (180 minutes) to answer the questions in each paper.

### 18.1 General Instructions for CBT:

1. Total duration of each paper of JEE (Advanced) 2019 examination is of 3 hours (180 minutes) duration.
2. The on-screen computer clock counter of every candidate will be set at the server. The countdown timer in the top right side of computer screen will display the time remaining (in minutes) available for the candidate to complete the examination. When the timer reaches zero, the examination will end by itself. Candidate will not be required to end or submit the examination.
3. The Question Palette displayed on the right side of screen will show the status of each question using one of the following symbols:



4. The “Marked for Review” status for a question indicates that candidate would like to have a relook at that question again. A candidate has the option of answering a question and simultaneously “Marked for Review”, these answers will be considered for evaluation. However, if a candidate has simply put “Marked for Review” for a question without answering it, the corresponding question marked for review without an answer will not be considered for evaluation. It may be noted that a candidate can return to any “Marked for Review” question any time during the examination by clicking on the corresponding question number icon displayed on the Question Palette of the corresponding section.

5. Candidate can click on the ">" arrow which appears to the left of question palette to collapse the question palette thereby maximizing the question viewing window. To view the question palette again, candidate can click on "<" which appears on the right side of question window.
5. Candidate can change the preferred language (English or Hindi) for displaying the questions, anytime during the duration of the examination, by clicking on the dropdown menu in "View In" icon provided on the right side of the screen.
6. Candidate can click on  to navigate to the bottom and  to navigate to the top of the question area, without scrolling. Using the computer mouse the candidate can scroll up and down the question viewing area for viewing the entire question.
7. The full paper can be viewed by clicking the "Question Paper" icon on the top right corner of the screen.
8. *Scribble Pads* for doing rough work/calculations will be provided to the candidates. The *Scribble Pads* would have a Header page for the candidates to write down his/her *Name* and *Registration Number*. Candidates are allowed to take his/her signed *Scribble Pads* at the end of each paper of the examination given to him/her at the start of the paper.

## 18.2 Navigating to a Question:

To navigate between sections of the question paper, candidate needs to click on the preferred section from all the displayed sections.

To navigate between questions within a section, candidate needs to do the following:

- a. Click on the question number in the Question Palette at the right of the screen to go to that numbered question directly. **Note that using this option does NOT save the answer to the currently displayed question.**

- b. Click on “Save & Next” to save the answer of any question. Clicking on “Save & Next” will save the answer for the current question and the next question will be displayed on the candidate’s computer screen.
- c. Click on “Mark for Review & Next” to mark a question for review (without answering it) and proceed to the next question.

### 18.3 Answering a Question:

1. Procedure for answering a multiple choice type question:
  - a) To select the option(s), click on the corresponding button(s) of the option(s).
  - b) To deselect the chosen answer, click on the button of the chosen option again or click on the “Clear Response” button.
  - c) To save the answer, the candidate MUST click on the “Save & Next” button.
  - d) To mark the question for review (without answering it), click on the “Mark for Review & Next” button.
2. Procedure for answering questions that require inputs from on-screen virtual keyboard (numeric or otherwise):
  - a) Candidate will have to use the on-screen virtual keyboard (that would be displayed just below the question statement of these type of questions) and the attached computer mouse to enter his/her answer in the space provided for answer.
  - b) The answer can be changed, if required, anytime during the test. To save the answer, the candidate MUST click on the “Save & Next” button.
  - c) To mark the question for review (without answering it), click on the “Mark for Review & Next” button.

**Candidate will have the option to change previously saved answer of any question, anytime during the entire duration of the test. To change the answer to a question that has already been answered, first select the corresponding question from the Question Palette, then click on “Clear Response” to clear the previously entered answer and subsequently follow the procedure for answering that type of question.**

#### **18.4 Navigating through sections:**

1. Sections in the question paper are displayed on the top bar of the screen. Questions in a section can be viewed by clicking on the section name. The section in which candidate is currently viewing will be highlighted.
2. After clicking the “Save & Next” button on the last question for a section, candidate will automatically be taken to the first question of the next section.
3. Candidate can shuffle between sections and questions within sections anytime during the examination as per the convenience only during the time stipulated.
4. Candidate can view the corresponding section summary as part of the legend that appears in every section above the question palette.

#### **19. CITIES AND TOWNS WHERE JEE (ADVANCED) 2019 WILL BE HELD**

JEE (Advanced) 2019 will be held in selected cities and towns in India. Candidates have to compulsorily choose six cities / towns from a zone of their choice at the time of online registration. **Efforts will be made to allot the city / town from among the candidate’s choice but a different city / town in the same/other zone may be allotted under exceptional circumstances. Request for change of city / town will NOT be entertained under any circumstances.** A tentative list of cities/towns where JEE (Advanced) 2019 examination will be held is given in the following table. The final list of examination cities/towns would be notified before the start of the online JEE (Advanced) 2019 registration.

**TENTATIVE LIST OF CITIES AND TOWNS FOR JEE (ADVANCED) 2019**

<b>City/Town</b>	<b>Code</b>	<b>City/Town</b>	<b>Code</b>	<b>City/Town</b>	<b>Code</b>
<b><u>IIT BOMBAY ZONE</u></b>		<b><u>IIT DELHI ZONE</u></b>		<b><u>IIT GUWAHATI ZONE</u></b>	
<b>GOA</b>		<b>DELHI NCR</b>		<b>ARUNACHAL PRADESH</b>	
Madgaon	101	Delhi (East)	201	Naharlagun	301
Panaji	102	Delhi (North)	202		
		Delhi (South)	203		
<b>GUJARAT</b>		Delhi (West)	204	<b>ASSAM</b>	
Ahmedabad	103	Faridabad	205	Dibrugarh	302
Bhavnagar	104	Greater Noida	206	Guwahati	303
Bhuj	105	Gurugram	207	Jorhat	304
Gandhinagar	106	Noida	208	Silchar	305
Rajkot	107			Tezpur	306
Surat	108	<b>JAMMU and KASHMIR</b>			
Vadodara	109	Jammu	209	<b>BIHAR</b>	
<b>KARNATAKA</b>				Arrah	307
Bengaluru	110	<b>RAJASTHAN</b>		Aurangabad	308
Dharwad	111	Ajmer	210	Bhagalpur	309
Gulbarga	112	Alwar	211	Bihar Sharif	310
Mangaluru	113	Bikaner	212	Chhapra	311
Mysuru	114	Jaipur	213	Darbhanga	312
		Jodhpur	214	Gaya	313
<b>MAHARASHTRA</b>		Sikar	215	Muzaffarpur	314
Amravati	115	Udaipur	216	Patna	315
Aurangabad	116			Purnea	316
Kolhapur	117	<b>NEPAL</b>		Samastipur	317
Mumbai	118	Kathmandu	251	<b>MANIPUR</b>	
Nagpur	119			Imphal	318
Nanded	120			<b>MEGHALAYA</b>	
Nashik	121			Shillong	319
Navi Mumbai	122			<b>MIZORAM</b>	
Pune	123			Aizawl	320
Thane	124			<b>WEST BENGAL</b>	
Vasai	125			Siliguri	321
<b>ETHIOPIA</b>					
Addis Ababa	151				

City/Town	Code	City/Town	Code	City/Town	Code
<b><u>IIT GUWAHATI ZONE (contd.)</u></b>		<b><u>IIT KANPUR ZONE</u></b>		<b><u>IIT KHARAGPUR ZONE</u></b>	
<b>SIKKIM</b>		<b>MADHYA PRADESH</b>		<b>ANDAMAN &amp; NICOBAR ISLANDS</b>	
Gangtok	322	Bhopal	401	Port Blair	501
<b>TRIPURA</b>		Indore	402	<b>ANDHRA PRADESH</b>	
Agartala	323	Jabalpur	403	Visakhapatnam	502
<b>SINGAPORE</b>		<b>UTTAR PRADESH</b>		Vizianagaram	503
Singapore	351	Allahabad	404	<b>CHHATTISGARH</b>	
		Faizabad	405	Bhilai	504
		Gorakhpur	406	Bilaspur	505
		Jhansi	407	Raipur	506
		Kanpur	408	<b>JHARKHAND</b>	
		Lucknow	409	Bokaro	507
		Varanasi	410	Dhanbad	508
		<b>SRI LANKA</b>		Jamshedpur	509
		Colombo	451	Ranchi	510
				<b>ODISHA</b>	
				Berhampur	511
				Bhubaneswar	512
				Cuttack	513
				Rourkela	514
				<b>WEST BENGAL</b>	
				Asansol	515
				Baharampur	516
				Durgapur	517
				Kalyani	518
				Kharagpur	519
				Kolkata	520
				<b>BANGLADESH</b>	
				Dhaka	551

City/Town	Code	City/Town	Code	City/Town	Code
<b><u>IIT HYDRABAD ZONE</u></b>		<b><u>IIT HYDERABAD ZONE</u></b>		<b><u>IIT ROORKEE ZONE</u></b>	
		<b>(contd.)</b>		<b>(contd.)</b>	
<b>ANDHRA PRADESH</b>		<b>TELANGANA</b>		<b>PUNJAB</b>	
Anantapur	601	Hyderabad	629	Amritsar	711
Eluru	602	Karimnagar	630	Bathinda	712
Guntur	603	Khammam	631	Jalandhar	713
Kakinada	604	Mahabubnagar	632	Ludhiana	714
Kurnool	605	Nizamabad	633	Mohali	715
Nellore	606	Warangal	634	Patiala	716
Ongole	607			<b>UTTARAKHAND</b>	
Rajahmundry	608	<b>UNITED ARAB EMIRATES</b>		Dehradun	717
Tirupati	609	Dubai	651	Haldwani	718
Vijayawada	610			Haridwar	719
				Roorkee	720
<b>KERALA</b>		<b>City/Town</b>	<b>Code</b>	<b>UTTAR PRADESH</b>	
Alappuzha	611	<b><u>IIT ROORKEE ZONE</u></b>		Agra	721
Kannur	612	<b>CHANDIGARH</b>		Aligarh	722
Kasaragod	613	Chandigarh	701	Bareilly	723
Kochi	614	<b>HARYANA</b>		Ghaziabad	724
Kollam	615	Ambala	702	Mathura	725
Kottayam	616	Bahadurgarh	703	Meerut	726
Kozhikode	617	Hisar	704	Moradabad	727
Malappuram	618	Kurukshetra	705		
Palakkad	619	Panipat	706		
Thiruvananthapuram	620	<b>HIMACHAL PRADESH</b>			
Thrissur	621	Hamirpur	707		
		Kangra	708		
<b>PUDUCHERRY</b>		Shimla	709		
Puducherry	622	<b>Madhya Pradesh</b>			
		Gwalior	710		
<b>TAMIL NADU</b>					
Chennai	623				
Coimbatore	624				
Madurai	625				
Salem	626				
Tiruchirapalli	627				
Tirunelveli	628				

## 20. IMPORTANT INSTRUCTIONS

- Candidates **MUST** carry a printed copy of the **downloaded** admit card and their **original photo identity card** for the examination. Only candidates having a valid admit card will be allowed to write the examination.
- 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 in the examination. However, the authorities at their discretion may provisionally permit the candidate to appear in 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) 2019.
- Only pens, pencils, downloaded admit card and an original photo identity card are allowed to be taken inside the examination hall. Candidates will **NOT** be allowed to carry any electronic devices (e.g. mobile phones, smart phones, calculators, iPad, tabs, digital watches etc.), abacus, slide rule, log books, study material of any type, geometry box, written or white (blank) paper/piece of paper, wallets, etc. to the examination hall. Candidates are advised not to wear items containing metals such as rings, bracelet, earrings, pendants or cloths with big buttons.
- Candidates must report to the examination centres well in advance. **Candidates arriving at the examination centre after commencement of the examination in each paper (09:00 IST for Paper 1 and 14:00 IST for Paper 2) will not be allowed to take the test.**
- Candidates are required to be present in the examination hall for the entire duration of each paper. They **CANNOT** leave the examination hall before 12:00 IST for Paper 1 and before 17:00 IST for Paper 2.

- **Both Paper 1 and Paper 2 are compulsory.** Therefore, the responses of ONLY those candidates who have appeared in both Paper 1 and Paper 2 will be evaluated/graded.

## 21. TRANSMISSION OF CANDIDATE RESPONSES AND ONLINE DISPLAY OF ANSWER KEYS

- The responses of the candidates who have appeared for both Paper 1 and Paper 2, recorded during the exam, will be electronically mailed to their registered email ids.
- The answer keys for both Paper 1 and Paper 2 will be displayed on the online portal.

<b>Copy of candidate responses to be sent to the candidates</b>	By Saturday, June 01, 2019, 17:00 IST
<b>Online display of answer keys at <a href="https://jeeadv.ac.in/">https://jeeadv.ac.in/</a></b>	Tuesday, June 04, 2019, 10:00 IST
<b>Receiving feedback from candidates on answer keys through candidate portal</b>	Tuesday, June 04, 2019, 10:00 IST to Wednesday, June 05, 2019, 17:00 IST

## 22. RANK LISTS

- Only candidates who appear in both Paper 1 and Paper 2 will be considered for ranking.
- The marks obtained by a candidate in Physics in JEE (Advanced) 2019 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) 2019 is the sum of the marks awarded to him/her in Physics, Chemistry and Mathematics.
- Rank lists are prepared based on the aggregate marks in JEE (Advanced) 2019.
- If the aggregate marks scored by two or more candidates are the same, then the following tie-break policy will be used for awarding ranks:

**Step 1:** Candidates having higher positive marks will be awarded higher rank.

If the tie breaking criterion at Step 1 fails to break the tie, then the following criterion at Step 2 will be followed.

**Step 2:** 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.

- Rank lists for preparatory courses (see section **28. PREPARATORY COURSES**) will be prepared for SC, ST, and PwD candidates in all categories who satisfy the prescribed relaxed criteria given below.
- 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 and in aggregate will be included in the rank list. The minimum prescribed marks varies with the category as shown in the following table.

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

<b>Rank List</b>	<b>Minimum percentage of marks in each subject</b>	<b>Minimum percentage of aggregate marks</b>
Common rank list (CRL)	10.0	35.0
GEN-EWS rank list	9.0	31.5
OBC-NCL rank list	9.0	31.5
SC rank list	5.0	17.5
ST rank list	5.0	17.5
Common-PwD rank list (CRL-PwD)	5.0	17.5
GEN-EWS-PwD rank list	5.0	17.5
OBC-NCL-PwD rank list	5.0	17.5
SC-PwD rank list	5.0	17.5
ST-PwD rank list	5.0	17.5
Preparatory course rank lists	2.5	8.75

**NOTE:** CRL is the rank list in which all candidates (across all categories) will be given ranks.

**23. RESULTS OF JEE (ADVANCED) 2019**

- Results will be declared on Friday, June 14, 2019 10:00 IST. Category-wise All India Ranks (AIR) of successful candidates will be available through the online portal after the results are declared. Text messages will also be sent to the candidates to their registered mobile numbers.
- Individual rank cards will **NOT** be sent to candidates.
- However, qualifying in JEE Advanced (2019), filling up choices and/or participating in the joint seat allocation process do not guarantee a candidate to get admission in IITs. Admission will depend on the availability of seats during various rounds of seat allocation.

**24. ARCHITECTURE APTITUDE TEST FOR B. ARCH. PROGRAM**

- B. Arch. program is available at IIT Kharagpur and IIT Roorkee only. Candidates desirous of joining the B. Arch. (Architecture) program will have to PASS in the

Architecture Aptitude Test (AAT). Only those candidates who have qualified in JEE (Advanced) 2019 are eligible to appear in AAT 2019.

- Syllabus for AAT is given in **Annexure-I: SYLLABI**.
- Candidates must register online at the JEE (Advanced) 2019 online portal for AAT.
- AAT will be conducted only at the seven zonal coordinating 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) 2019 should be produced in the AAT examination hall.
- Candidates should bring their own drawing and colouring aids.
- The Joint Implementation Committee of JEE (Advanced) 2019 will decide the cut-off marks for passing AAT.
- Results of AAT will be declared on the JEE (Advanced) 2019 online portal.
- Candidates securing marks above the cut-off will be declared PASS in 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) 2019.

### **Schedule of AAT**

Portal for AAT Registration	<a href="https://jeeadv.ac.in/">https://jeeadv.ac.in/</a>
Registration for AAT	Friday, June 14, 2019, 10:00 IST to Saturday, June 15, 2019, 17:00 IST
Architecture Aptitude Test	Monday, June 17, 2019 09:00 to 12:00 IST
Declaration of AAT Results	Friday, June 21, 2019

# Part-III

# ADMISSION

## 25. 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 (AIU).
- 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 AIU.
- H.S.C. vocational examination.
- A Diploma recognized by the All India Council for Technical Education (AICTE) 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 AIU 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.

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

- The candidates should satisfy **at least one of the following two criteria** for admission to IITs:

(1) Must have secured at least 75% aggregate marks in the Class XII (or equivalent) Board examination. The aggregate marks for SC, ST and PwD candidates should be at least 65%.

(2) Must be within the category-wise top 20 percentile of successful candidates in their respective Class XII (or equivalent) board examination.

The percentile calculation will be done for the required subjects in a single academic year only. Therefore, candidates appearing for improvement in Board examinations can EITHER appear in one or more subjects and secure 75% aggregate marks (65% for SC, ST and PwD) after improvement, OR, appear for improvement in ALL subjects to be in top 20 percentile (see section titled “Regarding the cut-off marks for the top 20 percentile”) of the corresponding academic year.

- 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.
  - i. Physics
  - ii. Chemistry
  - iii. Mathematics
  - iv. A language (if the candidate has taken more than one language, then the language with the higher marks will be considered)
  - v. Any subject other than the above four (the subject with the highest marks will be considered).

- For calculation of the total marks for five subjects, if the marks awarded in a subject is **NOT** out of 100, then the marks will be scaled (up or down) to 100 so that the total aggregate marks is out of 500.
- 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 acceptance of the allocated seat. In case such a certificate is not provided, the decision taken by the Joint Implementation Committee of JEE (Advanced) 2019 will be final.
- 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/s will be used for calculating percentage of aggregate marks.
- For candidates who appeared in the Class XII (or equivalent) Board examination for the first time in 2018 and reappeared in ALL subjects (for whatsoever reason) in 2019, the best of the two performances will be considered.
- If a Board gives aggregate marks considering both Class XI and Class XII examinations (in the 10+2 system), then only 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.

**Foreign candidates may follow the link**

**<https://jeeadv.ac.in/Foreign-Candidates.html> for eligibility criteria.**

### **26.1. Regarding the cut-off marks for the top 20 percentile**

- The category-wise cut-off marks for the top 20 percentile are calculated based on the marks scored by the candidates who pass in their respective boards in the particular year.
- The cut-off marks for PwD candidates will be the same as the lowest of the cut-off marks for GEN, GEN-EWS, OBC-NCL, SC and ST categories.
- It is reiterated that top 20 percentile cut-off for the academic year 2019 will be considered for the candidates who pass the Class XII (or equivalent) examination in 2019.
- Similarly, top 20 percentile cut-off for the academic year 2018 will be considered for the candidates who pass the Class XII (or equivalent) examination in 2018.
- Candidates who appeared in Class XII (or equivalent) examination for the first time in 2018 and wish to (or have to) reappear in 2019 with the objective to qualify through top 20 percentile cut-off criteria, should reappear in all the subjects. For such candidates, top 20 percentile cut-off for 2019 will be considered.
- 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, in the respective categories, for the CBSE will be used.

### **26.2. Regarding the aggregate marks of 75% (or 65% for SC, ST and PwD)**

- The aggregate marks scored by the candidate in the 2019 Class XII (or equivalent) Board examination will be considered for candidates who pass the Class XII examination in 2019.

- The aggregate marks scored by the candidate in the 2018 Class XII (or equivalent) Board examination will be considered provided the candidate does not reappear in the Class XII (or equivalent) examination in 2019 in any of the subjects.
- If a candidate has passed his/her Class XII (or equivalent) in 2018 and wishes to improve his/her aggregate marks to meet the “aggregate marks of 75% (or 65% for SC, ST and PwD) criterion”, he/she can reappear for any number of subjects he/she wishes for improvement. The percentage marks in this situation will be calculated by considering the marks obtained in 2018 or 2019, whichever is higher, in the respective subjects, in his/her two attempts in 2018 and 2019.

## **27. JOINT SEAT ALLOCATION**

- The seats across IITs, NITs, IIITs and other Govt. Funded Technical Institutes (GFTIs) will be allocated by the Joint Seat Allocation Authority (JoSAA).
- All the candidates who are eligible for admission will have to participate in the joint seat allocation process by filling in their choices of the courses. The detailed instructions for filling-in the choices and the seat allotment procedure will be made available by JoSAA through Seat Allotment Brochure.
- The schedule of the joint seat allocation will be announced separately by JoSAA 2019.
- The list of courses that will be offered by the IITs for admission for the academic year 2019-20 will be made available at the time of online filling-in of choices.

## **28. PREPARATORY COURSES**

- The vacant seats reserved for SC, ST and PwD candidates will be allotted to the candidates of respective categories for admission to a preparatory course of 1-year duration on the basis of relaxed admission criteria (see **22. RANK 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 accepted a seat in the preparatory course earlier.
- All the IITs will run preparatory courses of one-year duration for SC, ST and PwD candidates intended to prepare them to pursue the academic program (for Academic Year 2020-21) to which they have been allocated. At the end of this course, candidates are declared as 'pass' or 'fail'.
- On successful completion of the course, the candidates will be offered direct admission in July 2020 (Academic Year 2020-21) to the already allotted undergraduate course.
- Candidates admitted to the preparatory course are also eligible to appear in JEE (Advanced) 2020 subject to fulfilling other eligibility criteria.
- Filling-in of choices for preparatory courses is through the same online portal.

## **29. 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 govt. registered medical practitioner has to be produced at the time of seat acceptance. IITs may constitute a medical board to test the validity of the candidate's medical condition.
- 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.

### **30. GENDER RESTRICTION FOR MINING ENGINEERING PROFESSION**

- 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.”*

However, “female” candidates will be admitted to Mining Engineering or Mining Machinery Engineering related courses at IIT (ISM) Dhanbad, IIT Kharagpur and IIT (BHU) Varanasi.

### **31. LIST OF COURSES OFFERED BY IITs IN THE ACADEMIC YEAR 2018-19**

The relevant courses offered by IITs in the academic year 2018-19 are given in **Annexure – III**. Some of the courses have additional requirements and these are marked as AR. The courses to be offered by the various Institutes in 2019 may vary. A few of the courses offered in 2018 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 of the choices for seat allocation.

### **32. Grievances**

All stages of JEE (Advanced) 2019 will be conducted with transparency. Should there be any grievance relating to JEE (Advanced) 2019, the candidate can write to the Chairman of the Zonal IIT, or to the Organizing Chairman of JEE (Advanced) 2019 for clarification.

# **Annexure-I**

# **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  $\text{Fe}^{2+}$ ,  $\text{Cu}^{2+}$  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

X<sub>2</sub>, HX, HOX and H<sub>2</sub>O (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-Tiemann 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<sub>2</sub>/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

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.

### Probability

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.

# **Annexure-II**

# **CERTIFICATE FORMATS**

**FORM-GEN-EWS**

**Government of .....**  
**(Name & Address of the authority issuing the certificate)**

**INCOME & ASSET CERTIFICATE TO BE PRODUCED BY ECONOMICALLY WEAKER SECTIONS**

Certificate No. \_\_\_\_\_ Date: \_\_\_\_\_

**VALID FOR THE YEAR** \_\_\_\_\_

1. This is to certify that Shri/Smt./Kumari \_\_\_\_\_ son/daughter/wife of \_\_\_\_\_ permanent resident of \_\_\_\_\_, Village/Street \_\_\_\_\_ Post Office \_\_\_\_\_ District \_\_\_\_\_ in the State/Union Territory \_\_\_\_\_ Pin Code \_\_\_\_\_ whose photograph in attested below belongs to Economically Weaker Sections, since the gross annual income\* of his/her **“family”**\*\* is below Rs. 8 lakh (Rupees Eight Lakh only) for the financial year \_\_\_\_\_. His/her family does not own or possess any of the following assets\*\*\*:

- I. 5 acres of agricultural land and above;
- II. Residential flat of 1000 sq. ft. and above;
- III. Residential plot of 100 sq. yards and above in notified municipalities;
- IV. Residential plot of 200 sq. yards and above in areas other than the notified municipalities.

2. Shri/Smt./Kumari \_\_\_\_\_ belongs to the \_\_\_\_\_ caste which is not recognized as a Schedule Caste, Schedule Tribe and Other Backward Classes (Central List).

Signature with seal of Officer \_\_\_\_\_

Name \_\_\_\_\_

Designation \_\_\_\_\_

Recent Passport size  
attested photograph  
of the applicant

**The income and assets of the families as mentioned  
would be required to be certified by an officer not  
below the rank of Tehsildar in the States/UTs.**

\* **Note1:** Income covered all sources i.e. salary, agricultural, business, profession, etc.

\*\* **Note2:** The term **“Family”** for this purpose include the person, who seeks benefit of reservation, his/her parents are siblings below the age of 18 years as also his/her spouse and children below the age of 18 years.

\*\*\* **Note3:** The property held by a **“Family”** in different locations or different places/cities have been clubbed while applying the land or property holding test to determine EWS status.

**FORM-OBC-NCL**

**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/Union Territory \_\_\_\_\_ belongs to the  
\_\_\_\_\_ community that is recognized as a backward class under  
Government of India\*\*, Ministry of Social Justice and Empowerment's Resolution No.  
\_\_\_\_\_ dated \_\_\_\_\_ \*\*\*

Shri/Smt./Kum. \_\_\_\_\_ and/or \_\_\_\_\_  
his/her family ordinarily reside(s) in the \_\_\_\_\_ District/Division of  
the \_\_\_\_\_ State/Union Territory. 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, again  
further modified vide OM No.36036/2/2013-Estt (Res) dtd. 30/05/2014.

District Magistrate /  
Deputy Commissioner /  
Any other Competent Authority

Dated:

Seal

- 
- \* **Please delete the word(s) which are not applicable.**  
\*\* **As listed in the Annexure (for FORM-OBC-NCL)**  
\*\*\* **The authority issuing the certificate needs to mention the details of Resolution of Government of India, in which the caste of the candidate is mentioned as OBC.**

**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:
- 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).
  - Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
  - Revenue Officer not below the rank of Tehsildar' and
  - Sub-Divisional Officer of the area where the candidate and/or his family resides

**ANNEXURE for FORM-OBC-NCL**

Sl. No.	Resolution No.	Date of Notification
1	No.12011/68/93-BCC(C)	13.09.1993
2	No.12011/9/94-BCC	19.10.1994
3	No.12011/7/95-BCC	24.05.1995
4	No.12011/96/94-BCC	09.03.1996
5	No.12011/44/96-BCC	11.12.1996
6	No.12011/13/97-BCC	03.12.1997
7	No.12011/99/94-BCC	11.12.1997
8	No.12011/68/98-BCC	27.10.1999
9	No.12011/88/98-BCC	06.12.1999
10	No.12011/36/99-BCC	04.04.2000
11	No.12011/44/99-BCC	21.09.2000
12	No.12015/9/2000-BCC	06.09.2001
13	No.12011/1/2001-BCC	19.06.2003
14	No.12011/4/2002-BCC	13.01.2004
15	No.12011/9/2004-BCC	16.01.2006
16	No.12011/14/2004-BCC	12.03.2007
17	No.12011/16/2007-BCC	12.10.2007
18	No.12019/6/2005-BCC	30.07.2010
19	No. 12015/2/2007-BCC	18.08.2010
20	No.12015/15/2008-BCC	16.06.2011
21	No.12015/13/2010-BC-II	08.12.2011
22	No.12015/5/2011-BC-II	17.02.2014

**FORM-SC/ST****SC/ST Certificate Format****FORM OF CERTIFICATE TO BE PRODUCED BY SCHEDULED CASTES (SC) AND SCHEDULED TRIBES (ST) CANDIDATES**

1. This is to certify that Shri/ Shirmati/ 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-II  
Disability Certificate

(In cases of amputation or complete permanent paralysis of limbs and in cases of blindness)

(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE CERTIFICATE)

(See rule 4)

Recent PP size Attested Photograph (Showing face only) of the person with disability
---

Certificate No. \_\_\_\_\_

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

This is to certify that I have carefully examined Shri/Smt./Kum. \_\_\_\_\_

\_\_\_\_\_ son/wife/daughter of Shri \_\_\_\_\_

Date of Birth (DD/MM/YY) \_\_\_\_\_ Age \_\_\_\_\_ years, male/female

\_\_\_\_\_ Registration No. \_\_\_\_\_ permanent resident of House

No. \_\_\_\_\_ Ward/Village/ Street \_\_\_\_\_

Post Office \_\_\_\_\_ District \_\_\_\_\_

State \_\_\_\_\_, whose photograph is affixed above, and am

satisfied that:

1. he/she is a case of:
  - a. locomotor disability
  - b. blindness
 (Please tick as applicable)
2. the diagnosis in his/her case is \_\_\_\_\_
3. He/ She has \_\_\_\_\_% (in figure) \_\_\_\_\_ percent  
(in words) permanent physical impairment/blindness in relation to his/her \_\_\_\_\_  
(part of body) as per guidelines (to be specified).
4. The applicant has submitted the following document as proof of residence:-

Nature of Document	Date of Issue	Details of authority issuing certificate

(Signature and Seal of Authorised Signatory of notified Medical Authority)

Signature/Thumb impression of the person in whose favour disability certificate is issued.
---

**FORM-PwD(III)**

Form-III  
Disability Certificate  
(In cases of multiple disabilities)  
**(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE CERTIFICATE)**  
**(See rule 4)**

Recent PP size Attested Photograph (Showing face only) of the person with disability
---

Certificate No. \_\_\_\_\_ Date: \_\_\_\_\_

This is to certify that I have carefully examined Shri/Smt./Kum. \_\_\_\_\_  
 \_\_\_\_\_ son/ wife/daughter of Shri \_\_\_\_\_  
 \_\_\_\_\_ Date of Birth (DD/MM/YY) \_\_\_\_\_ Age \_\_\_\_\_ years,  
 male/female \_\_\_\_\_ Registration No. \_\_\_\_\_  
 permanent resident of House No. \_\_\_\_\_ Ward/Village/Street  
 \_\_\_\_\_ Post Office \_\_\_\_\_ District  
 \_\_\_\_\_ State \_\_\_\_\_,

whose photograph is affixed above, and are satisfied that:

1. He/she is a Case of **Multiple Disability**. His/her extent of permanent physical impairment/ disability has been evaluated as per guidelines (to be specified) for the disabilities ticked below, and shown against the relevant disability in the table below:

S. No.	Disability	Affected Part of Body	Diagnosis	Permanent physical impairment/mental disability (in %)
1	Locomotor disability	@		
2	Low vision	#		
3	Blindness	Both Eyes		
4	Hearing impairment	£		
5	Mental retardation	X		
6	Mental-illness	X		

**@ - e.g. Left/Right/both arms/legs**

**# - e.g. Single eye/both eyes**

**£ - e.g. Left/Right/both ears**

2. In the light of the above, his/her overall permanent physical impairment as per guidelines (to be specified), is as follows:

In figures: \_\_\_\_\_ percent

In words: \_\_\_\_\_ percent

3. The above condition is progressive/ non-progressive/ likely to improve/ not likely to improve.

4. Reassessment of disability is:

(i) not necessary

Or

(ii) is recommended/after \_\_\_\_\_ years \_\_\_\_\_ months, and therefore this certificate shall be valid till (DD/MM/YY) \_\_\_\_\_

5. The applicant has submitted the following document as proof of residence:

Nature of Document	Date of Issue	Details of authority issuing certificate

6. Signature and seal of the Medical Authority:

Name and Seal of Member	Name of Seal of Member	Name and Seal of the Chairperson

Signature/Thumb impression of the person in whose favour disability certificate is issued.
--

**FORM-PwD(IV)**

**Form-IV  
Disability Certificate**

(In cases other than those mentioned in Forms II and III)

**(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE CERTIFICATE)**

**(See rule 4)**

Recent PP size Attested Photograph (Showing face only) of the person with disability
---

Certificate No. \_\_\_\_\_ Date: \_\_\_\_\_

This is to certify that I have carefully examined Shri/Smt./Kum. \_\_\_\_\_  
 \_\_\_\_\_ son/ wife/daughter of Shri \_\_\_\_\_  
 \_\_\_\_\_ Date of Birth (DD/MM/YY) \_\_\_\_\_ Age \_\_\_\_\_ years,  
 male/female \_\_\_\_\_ Registration No. \_\_\_\_\_  
 permanent resident of House No. \_\_\_\_\_ Ward/Village/Street  
 \_\_\_\_\_ Post Office \_\_\_\_\_ District  
 \_\_\_\_\_ State \_\_\_\_\_,

whose photograph is affixed above, and am satisfied that he/she is a case of disability.

1. His/her extent of percentage of physical impairment/disability has been evaluated as per guidelines (to be specified) and is shown against the relevant disability in the table below:

S. No.	Disability	Affected Part of Body	Diagnosis	Permanent physical impairment/mental disability (in %)
1	Locomotor disability	@		
2	Low vision	#		
3	Blindness	Both Eyes		
4	Hearing impairment	£		
5	Mental retardation	X		
6	Mental-illness	X		

(Please strike out the disabilities which are not applicable.)

**@ - e.g. Left/Right/both arms/legs**

**# - e.g. Single eye/both eyes**

**£ - e.g. Left/Right/both ears**

2. The above condition is progressive/ non-progressive/ likely to improve/ not likely to improve.
  
3. Reassessment of disability is:
  - a. not necessary
  - Or
  - b. is recommended/after \_\_\_\_\_ years \_\_\_\_\_ months, and therefore this certificate shall be valid till (DD/MM/YY) \_\_\_\_\_
  
4. The applicant has submitted the following document as proof of residence:

Nature of Document	Date of Issue	Details of authority issuing certificate

(Authorised Signatory of notified Medical Authority)  
(Name and Seal)

Countersigned

{Countersignature and seal of the CMO/Medical Superintendent/Head of Government Hospital, in case the certificate is issued by a medical authority who is not a government servant (with seal)}

Signature/Thumb impression of the person in whose favour disability certificate is issued.
---

Note: In case this certificate is issued by a medical authority who is not a government servant, it shall be valid only if countersigned by the Chief Medical Officer of the District. Note: The principal rules were published in the Gazette of India vide notification number S.O. 908(E), dated the 31st December, 1996.

## FORM-DYSLEXIC-1

### FORMAT OF MEDICAL CERTIFICATE / REPORT TO BE PRODUCED BY DYSLEXIC CANDIDATE

{To be obtained from any Dyslexia Association\*}

Date:

#### PSYCHO-EDUCATION EVALUATION REPORT

Name of the candidate:

Date of Birth:

Registration in the Dyslexia Assn. (date / number):

Name of the Father/Mother/Guardian:

Name/address and Regn. No.  
of the Dyslexia Association :

Physical & Neurologic Assessment: [ ]

Psychological Assessment: [ ]

WISC Verbal IQ:  
Performance IQ:  
Full Scale IQ:

Interpretation: [ ]

Educational Assessment: [ ]

Certified that:

1. The condition of handicap is: MILD / MODERATE / SEVERE (tick whichever is applicable)\*\*
2. The disability is **PERMANENT** in nature.

\*Some Dyslexia Associations:

1. Dyslexia Trust of Kolkata, Divya Jalan, Aruna Bhaskar 3, Dover Park, Kolkata – 700019
2. Dyslexia Association Of Andhra Pradesh (DAAP), 3-4-494/1,1st Floor, Macherla Gastrology Hospital, Reddy College Road, Barkatpura, Hyderabad, Telangana, 500027
3. Madras Dyslexia Association, 94 Park View, 1<sup>st</sup> Floor, G.N. Chetty Road, T. Nagar, Chennai – 600017
4. Maharashtra Dyslexia Association, 003, Amit Park Bldg, L J Road, Deonar, Mumbai 400088
5. The Dyslexia Association of India, MZ-47, The Centre Stage Mall, Plot No 01, Block L, Sector 18, NOIDA 201303

\*\*Learning Disability is a permanent developmental disorder. Currently there are no standard approved methods to quantify the disorder. However the method of diagnosis is based on significant impairment in academic achievement. To avail the benefit of relaxed norm under PwD category, the candidate must come under SEVERE category.

**Name of the certifying official:**

**Seal:**

Photograph  
of the  
Candidate

**FORM-DYSLEXIC-2**

**\*CERTIFICATE TO BE PRODUCED BY DYSLEXIC CANDIDATE FROM THE  
PRINCIPAL OF THE SCHOOL/COLLEGE LAST ATTENDED**

**Testimonial**

Date:

Name of the candidate:

Date of Birth:

Name and Address of the School/College:



Certified that Shri/Shrimati/Kumari \_\_\_\_\_  
son/daughter of \_\_\_\_\_ of  
\_\_\_\_\_ village/town passed his/her Class XII from this  
school and as per records, availed concession under dyslexic category.

Signature with seal:

\_\_\_\_\_  
\*A candidate passing Class XII or equivalent through open school system or in private mode may submit the certificate to this effect from the competent authority in the board certifying the concessions availed under dyslexia.

**FORM-DS**

**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-SCRIBE**

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

From

Date:

Name of the candidate: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Roll Number of JEE (Main) 2019:

Mobile No: \_\_\_\_\_ Email: \_\_\_\_\_

The Chairman  
JEE (Advanced) 2019  
Indian Institute of Technology, Bombay/ Delhi/ Guwahati/ Kanpur/ Kharagpur/  
Hyderabad/ 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) 2019. I also request you to provide extra time of one hour to complete the paper as per the government norms. Kindly do the needful.

Thanking you,

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

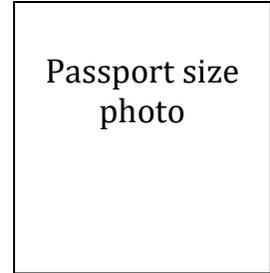
\_\_\_\_\_  
Signature of the Parent/Guardian

(Name of the Parent/Guardian)

### Declaration by the Candidate in Lieu of OBC-NCL Certificate

Name of the candidate: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Roll Number of JEE (Main) 2019:

Mobile No: \_\_\_\_\_ Email: \_\_\_\_\_

I understand that as per the new guideline from the Ministry of Personnel, Public Grievances and Pensions, GoI, I am required to submit OBC-NCL certificate issued on or after April 1, 2019. Since I have not been able to collect the said certificate on time, I may kindly be allowed to write JEE (Adv.) 2019 provisionally. I hereby declare that I wrote JEE (Main) 2019 as OBC-NCL candidate and that I will upload a fresh certificate (issued on/after April 1, 2019) at the web portal by June 05, 2019. I understand that inability to upload the same will lead to the withdrawal of OBC-NCL benefit. I also understand that, if qualified, my category will be adjusted accordingly in the Common Rank List.

**Signature of Father/Mother**

Name:

Date:

**Signature of Applicant**

Date:

# **Annexure-III**

## **COURSES OFFERED IN THE ACADEMIC YEAR 2018-19**

IITs

	B	BBS	BHU	D	G	GN	H	I	J	K	KGP	M	MANDI	PKD	P	R	RPR	TP	ISM	GOA	BH	JM	DWD	
B.Tech. (4 Years)																								
1	Aerospace Engineering	x								x	x	x												
2	Agriculture & Food Engineering										x													
3	Biological Sciences and Bioengineering									x														
4	Biotechnology				x											x								
5	Biotechnology & Biochemical Engineering			x							x													
6	Ceramic Engineering			x																				
7	Chemical Engineering	x		x	x	x	x	x		x	x	x				x	x	x	x	x			x	
8	Chemical Science and Technology				x																			
9	Civil Engineering	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	
10	Computer Science & Engineering	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11	Electrical Engineering	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	Electrical Engineering (Power & Automation)				x																			
13	Electronics & Communication Engineering		x		x											x			x					
14	Electronics & Electrical Communication Engineering										x													
15	Electronics & Electrical Engineering				x																			
16	Electronics & Instrumentation Engineering																			x				
17	Electronics Engineering			x																				
18	Engineering Physics	x			x	x		x					x			x				x				
19	Engineering Science						x																	
20	Environmental Engineering																			x				
21	Industrial Engineering										x													
22	Instrumentation Engineering										x													
23	Manufacturing Science and Engineering										x													
24	Materials Science and Engineering					x				x														
25	Materials Science and Metallurgical Engineering						x																	
26	Mathematics and Computing				x	x		x																
27	Mechanical Engineering	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	Metallurgical & Materials Engineering		x								x	x				x								
29	Metallurgical Engineering			x																				
30	Metallurgical Engineering & Materials Science	x						x																
31	Mineral Engineering																			x				
32	Mining Engineering			AR							AR									AR				
33	Mining Machinery Engineering																			AR				

IITs

		B	BBS	BHU	D	G	GN	H	I	J	K	KGP	M	MANDI	PKD	P	R	RPR	TP	ISM	GOA	BH	JM	DWD
34	Naval Architecture & Ocean Engineering												x											
35	Ocean Engineering & Naval Architecture											x												
36	Petroleum Engineering																			AR				
37	Pharmaceutical Engineering & Technology			x																				
38	Polymer Science and Engineering																x							
39	Production and Industrial Engineering				x													x						
40	Textile Technology				x																			
B.S. (4 Years)																								
41	Chemistry	x									x													
42	Earth Sciences										x													
43	Economics	x									x													
44	Mathematics and Scientific Computing										x													
45	Physics										x													
B. Arch. (5 Years)																								
46	Architecture											x					x							
B.Tech.-M.Tech. Dual Degree (5 Years)																								
47	Aerospace Engineering											x	x											
48	Agriculture and Food Engineering with M.Tech in any of the listed specialization											x												
49	Biochemical Engineering & Biotechnology				x																			
50	Biochemical Engineering with M.Tech. in Biochemical Engg & Biotechnology			x																				
51	Bioengineering with M.Tech. in Biomedical Technology			x																				
52	Biological Engineering												x											
53	Biotechnology & Biochemical Engineering											x												
54	Ceramic Engineering			x																				
55	Chemical Engineering				x							x	x											
56	Civil Engineering			x									x											
57	Civil Engineering with M. Tech. in any of the listed specialization											x												
58	Civil Engineering with M. Tech. in Environmental Engineering		x																					

IITs

		B	BBS	BHU	D	G	GN	H	I	J	K	KGP	M	MANDI	PKD	P	R	RPR	TP	ISM	GOA	BH	JM	DWD	
59	Civil Engineering with M. Tech. in Structural Engineering		x																						
60	Civil Engineering and M. Tech. in Transportation Engineering		x																						
61	Computer Science & Engineering		x	x	x							x	x							x					
62	Electrical Engineering												x												
63	Electrical Engineering with M. Tech. in any of the listed specializations											x													
64	Electrical Engineering with M. Tech. in Communications and Signal Processing	x																							
65	Electrical Engineering with M. Tech. in Microelectronics	x																							
66	Electrical Engineering with M.Tech. in Power Electronics		x	x																					
67	Electronics & Electrical Communication Engineering with M. Tech. in any of the listed specializations											x													
68	Energy Engineering with M.Tech in Energy Systems Engineering	x																							
69	Engineering Design												x												
70	Engineering Physics			x																					
71	Industrial Chemistry			x																					
72	Industrial & Systems Engineering with M. Tech. in Industrial & Engineering and Management											x													
73	Manufacturing Science & Engineering with M. Tech. in Industrial Engineering											x													
74	Material Science & Technology			x																					
75	Mathematics & Computing			x	x																				
76	Mechanical Engineering			x									x					x							
77	Mechanical Engineering and Mechanical System Design		x																						
78	Mechanical Engineering and M.Tech in Thermal Science and Engineering		x																						
79	Mechanical Engineering with M. Tech. in any of the listed specialization											x													
80	Mechanical Engineering with M. Tech. in Computer Integrated Manufacturing	x																							

IITs

		B	BBS	BHU	D	G	GN	H	I	J	K	KGP	M	MANDI	PKD	P	R	RPR	TP	ISM	GOA	BH	JM	DWD
81	Mechanical Engineering with M. Tech. in Manufacturing Engineering		x																					
82	Metallurgical & Materials Engineering											x	x											
83	Metallurgical Engineering			x																				
84	Metallurgical Engineering & Materials Science with M. Tech. in Metallurgical Process Engineering	x																						
85	Metallurgical & Materials Engineering and M.Tech. in Material Science & Engineering		x																					
86	Metallurgical Engineering & Materials Science with M. Tech. in Ceramics & Composites	x																						
87	Mining Engineering			AR								AR												
88	Mining Engineering with M.Tech in Safety Engineering											AR												
89	Naval Architecture & Ocean Engineering												x											
90	Ocean Engineering & Naval Architecture											x												
91	Pharmaceutical Engineering & Technology			x																				
92	Engineering Product Design and Manufacturing with M. Tech in Design and Quality Engineering											x												
B.S.-M.S. Dual Degree (5 Years)																								
93	Biological Sciences												x											
94	Physics												x											
Integrated M.Tech. (5 Years)																								
95	Applied Geology																				AR			
96	Applied Geophysics																				AR			
97	Geological Technology																	x						
98	Geophysical Technology																	x						
99	Mathematics & Computing																				x			
Integrated M.Sc. (5 Years)																								
100	Applied Geology											AR												
101	Applied Mathematics																		x					
102	Chemistry											x												

IITs

		B	BBS	BHU	D	G	GN	H	I	J	K	KGP	M	MANDI	PKD	P	R	RPR	TP	ISM	GOA	BH	JM	DWD	
103	Economics											x													
104	Exploration Geophysics											AR													
105	Mathematics and Computing											x													
106	Physics											x					x								

- NB. 1) AR: These courses have additional requirements.  
 2) At IIT Kharagpur, B.Tech. degrees are B.Tech.(Hons).

## Annexure-IV: IMPORTANT DATES

No.	Activity	Day, Date and TIME (IST)
1.	JEE (Main) 2019 [Computer Based Examination]	January 06 to 20, 2019
2.	JEE (Main) 2019 [Computer Based Examination]	April 06 to 20, 2019
3.	Results of JEE (Main) 2019	<b>31-01-2019</b> <b>30-04-2019</b>
4.	Registration for JEE (Advanced) 2019	FRI, 03-05-2019 to THU, 09-05-2019
5.	Last date for fee payment of registered candidates	FRI, 10-05-2019
6.	Admit card available for downloading	MON, 20-05-2019 to MON, 27-05-2019
7.	<b>JEE (Advanced) 2019 examination</b>	<b>MON, 27-05-2019</b>
8.	Copy of candidate responses to be sent to the candidates	WED, 29-05-2019, 10 AM to SAT, 01-06-2019, 05 PM
9.	Online display of answer keys	TUE, 04-06-2019, 10 AM
10.	Feedback and comments on answer keys from the candidates	TUE, 04-06-2019, 10 AM to WED, 05-06-2019, 05 PM
11.	Online declaration of results of JEE (advanced )2019	FRI, 14-06-2019
12.	Online registration for Architecture Aptitude Test	FRI, 14-06-2019, 10 AM to SAT, 15-06-2019, 05 PM
13.	Architecture Aptitude Test	MON, 17-06-2019
14.	Declaration of results of AAT	FRI, 21-06-2019, 05 PM
15.	Tentative dates for Seat Allotment	WED, 19-06-2019 to MON, 15-07-2019

## Annexure-V: CONTACT DETAILS OF ZONE-WISE IITs

<b>Zone Wise Institutes</b>	<b>Address for Correspondence</b>	<b>Phone Number and Email</b>
<b>South</b> IIT Hyderabad* IIT Madras IIT Palakkad IIT Tirupati	Chairman JEE (Advanced) 2019 IIT Hyderabad Kandi-602285, Sangareddy Hyderabad	Phone: +91 40 23016157 Fax: +91 40 23016444 E-mail: jee@iith.ac.in
<b>West</b> IIT Bombay* IIT Gandhinagar IIT Goa IIT Dharwad	Chairman JEE (Advanced) 2019 IIT Bombay, Powai Mumbai - 400076	Phone: +91 22 25769093 Fax: +91 22 25720305 E-mail: jeeadv@iitb.ac.in
<b>North-Central</b> IIT Delhi* IIT Jodhpur IIT Jammu	Chairman, JEE (Advanced) 2019 IIT Delhi, Hauz Khas New Delhi - 110016	Phone: +91 11 26591785 Fax: +91 11 26581067 E-mail: jeeadv@admin.iitd.ac.in
<b>North-East</b> IIT Guwahati* IIT Patna	Chairman JEE (Advanced) 2019 IIT Guwahati Guwahati - 781039	Phone: +91 361 2692795 Fax: +91 361 2582180 E-mail: jee@iitg.ac.in
<b>Central</b> IIT Kanpur* IIT Indore IIT (BHU)	Chairman JEE (Advanced) 2019 IIT Kanpur Kanpur - 208 016	Phone: +91 512 2597325 Fax: +91 512 2590103 E-mail: jeeadv@iitk.ac.in
<b>East</b> IIT Kharagpur* IIT Bhubaneswar IIT (ISM) IIT Bhilai	Chairman JEE (Advanced) 2019 IIT Kharagpur Kharagpur - 721302	Phone: +91 3222 282102 Fax: +91 3222 278242 E-mail: jeeadv@iitkgp.ac.in
<b>North</b> IIT Roorkee* IIT Mandi IIT Ropar	Organizing Chairman JEE (Advanced) 2019 IIT Roorkee Roorkee - 247667	Phone: +91 1332 284272 Fax: +91 1332 285346 E-mail: jeech@iitr.ac.in

\* Zonal IIT