

Facts, Syllabus and Pattern

What is JEE Advanced?

JEE Advanced is one of the [toughest exams in India](#). Over 2.24 lakh students take it every year with only 20,000 getting a rank. JEE (Joint Entrance Exam), an all India common entrance exam for engineering, is held in two stages:

- JEE Main
- JEE Advanced

JEE Advanced is the second stage of the Joint Entrance Examination. You are eligible to take JEE Advanced only if you clear the [cut-off for JEE Main](#).

This examination will form the basis for admission to various bachelor's degree programmes in IITs. IIT Kanpur is to conduct the JEE Advanced 2019 examination for admission to 23 IITs for 12,428 seats, which include Indian School of Mines (ISM), Dhanbad. From 2018, the IITs will also reserve special seats for female engineering aspirants.

Syllabus for JEE Advanced

Physics

1. General Physics
 - Units and Dimensions
 - Measurement and Errors
 - Vectors
2. Mechanics
 - Kinematics
 - Laws of Motion
 - Friction
 - Centre of Mass, Momentum and Collision
 - Work, Energy and Power
 - Circular Motion

- Rotational Dynamics
- Mechanical Properties of Matter
- Fluid Mechanics
- Simple Harmonic Motion
- Wave Motion and String Waves
- Sound Waves

3. Thermal Physics

- Thermodynamics
- Kinetic Theory
- Heat Transfer
- Thermal Expansion

4. Electricity and Magnetism

- Electrostatics
- Current Electricity
- Capacitors
- Magnetism
- Electromagnetic Induction
- Alternating Current

5. Optics

- Geometrical Optics
- Light Waves
- Dispersion and Spectra

6. Modern Physics

- Nuclear Physics
- Photoelectric Effect and Wave-Particle Duality
- Bohr's Model and Physics of the Atom
- X-rays

Chemistry

1. Physical Chemistry

- Some Basic Concepts of Chemistry
- Mole Concept
- Redox Reactions
- Gaseous and Liquid States
- Atomic Structure and Chemical Bonding
- Energetics
- Chemical Equilibrium
- Electrochemistry
- Chemical Kinetics
- Solid State
- Solutions
- Surface Chemistry
- Nuclear Chemistry

2. Inorganic Chemistry

- s-Block Elements
- p-Block Elements
- Transition Elements (3D Series)

- Coordination Compounds
- Metallurgy
- Qualitative Analysis

3. Organic Chemistry

- General Organic Chemistry
- Hydrocarbons
- Reactions of Benzene
- Phenols
- Aldehydes, Ketones and Carboxylic Acids
- Alcohols and Ethers
- Haloalkanes and Haloarenes
- Organic Compounds Containing Nitrogen
- Carbohydrates
- Amino Acids and Peptides
- Polymers
- Practical Organic Chemistry

Maths

1. Algebra

- Complex Numbers
- Quadratic Equations
- Sequence and Series
- Logarithm
- Binomial Theorem

- Permutations and Combinations
- Determinants and Matrices
- Probability

2. Trigonometry

- Trigonometry
- Solutions of Triangle
- Inverse Trigonometric Functions

3. Analytical Geometry

- Coordinate Geometry
- Straight Lines and Pair of Straight Lines
- Circle
- Parabola
- Ellipse
- Hyperbola

4. Differential Calculus

- Sets, Relations and Functions
- Limits and Continuity
- Differentiation
- Application of Derivatives

5. Integral Calculus

- Indefinite Integrals
- Definite Integrals
- Area of Bounded Regions

- Differential Equations

6. Vectors

- Vector Algebra

- 3D Geometry

Exam Pattern for JEE Advanced

JEE Advanced is probably the most unpredictable exam. The paper pattern is different every year with a different marking scheme, hence students should go through previous years' papers to get a fair idea.

Looking at the previous years' papers, we have identified certain trends, however they are subject to change. JEE Advanced usually consists of two papers of 3 hours each. The marks however, vary.

Here are the types of questions asked in JEE Advanced over the years:

1. Single choice MCQs
2. Multiple correct MCQs
3. Integer answer type questions
4. Matrix match type
5. Passage comprehension type

Here's a [paper pattern analysis](#) that might help you identify a trend.

Find out which colleges participate in the [JEE Advanced admission](#) process.

How to apply

Eligibility Criteria for JEE Advanced

- **Age:**

As a general category candidate, you must have been born on or after 1st October 1994.

As a SC, ST or PWD candidate, you must have been born on or after 1st October 1989.

- **Performance in JEE Main:**

You should be among the top 2,20,000 candidates (all categories included) in JEE Main.

- **Reservation:**

50.5% candidates are selected from the General category.

27% will be chosen from OBC-NCL, 15% from SC, 7.5% from ST and 3% from PwD category.

- **Year of passing 12th standard or equivalent exam:**

You must have passed Class 12th or any equivalent qualifying examination in 2018 or 2019 (provided the results are declared before 15th June 2019).

- **Number of attempts:**

You can attempt JEE Advanced a maximum of 2 consecutive years.

- **Earlier Admission at IITs or ISM:**

You are ineligible for JEE Advanced if you have taken or accepted admission by paying the fees at any of the IITs or ISM in the past.

You are also ineligible if your admission to any of the IITs was canceled in the past.

However, if you have taken a 'Preparatory Course' one year prior to the exam in any IITs, you can apply for JEE Advanced.

ELIGIBILITY CRITERIA FOR APPEARING FOR JEE (ADVANCED) 2021

All the candidates **must simultaneously fulfil each and every one of the following five criteria** to appear in JEE (Advanced) 2021.

Criterion 1 – Performance in JEE (Main) 2021: Candidates should be among the top 2,50,000* successful candidates (including all categories) in B.E./B.Tech. Paper of JEE (Main) 2021.

The percentages of various categories of candidates to be shortlisted are: 10% for GEN-EWS, 27% for OBC-NCL, 15% for SC, 7.5% for ST and the remaining 40.5% is OPEN for all. Within each of these five categories, 5% horizontal reservation is available for PwD candidates.

The following table shows the order to be followed while choosing top 2,50,000* candidates in various categories based on the performance in B.E./B.Tech. Paper of JEE (Main) 2021.

Category-wise distribution of top 2,50,000* candidates (Criterion 1)

Order	Category	Number of "Top" candidates	
1	OPEN	96187	101250
2	OPEN-PwD	5063	

3	GEN-EWS	23750	25000
4	GEN-EWS-PwD	1250	
5	OBC-NCL	64125	67500
6	OBC-NCL-PwD	3375	
7	SC	35625	37500
8	SC-PwD	1875	
9	ST	17812	18750
10	ST-PwD	938	

*The total number of candidates can be slightly greater than 2,50,000 in the presence of “tied” ranks/scores in any category.

Criterion 2 – Age limit: Candidates should have been born on or after October 1, 1996. Five years age relaxation is given to SC, ST and PwD candidates, i.e., these candidates should have been born on or after October 1, 1991.

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 2020 or 2021 with the subjects Physics, Chemistry and Mathematics. Candidates who had appeared in Class XII (or equivalent) examination, for the first time in 2019 or earlier, are NOT eligible to appear in JEE (Advanced) 2021.

*** By appearance in Class XII (or equivalent) examination, it is meant that the board concerned declared the result of a particular candidate for that year irrespective of whether or not an examination was conducted. It will be considered as an appearance even if the result of a particular candidate got withheld.**

However, if the examination Board of Class XII (or equivalent) declared the results for the academic year 2018-19 after June 2019, then the candidates of that board who appeared for their Class XII exam in 2019 are also eligible to appear in JEE (Advanced) 2021, provided they meet all the other eligibility criteria simultaneously. In case, the examination Board of Class XII (or equivalent) declared the results for the academic year 2018-19 before June 2019 but the result of a particular candidate was withheld, then the candidate will not be eligible to appear in JEE (Advanced) 2021.

Relaxation of Criteria 1 to 4 as a special case for JEE (Advanced) 2021:

Candidates who successfully registered for JEE (Advanced) 2020 but were absent in both the papers, i.e. Paper 1 and Paper 2, of JEE (Advanced) 2020 are eligible to appear for JEE (Advanced) 2021 and do not need to fulfil Criteria 1 to 4 above. However, they must successfully register for the JEE (Advanced) 2021 in the online registration portal and pay the registration fee [see Clause 12. REGISTRATION FOR JEE (ADVANCED) 2021 of Information Brochure]. Further, these candidates would be considered in addition to and not as part of the total number of candidates who would qualify from JEE (Main) 2021 for appearing in JEE (Advanced) 2021. This is a one-time measure valid only for JEE (Advanced) 2021. These candidates can confirm their eligibility for appearing in JEE (Advanced) 2021 by visiting the official website (<https://jeeadv.ac.in>) and filling in the requisite information. A Unique Reference Code (URC) will be provided to the eligible candidates, which will be required during the registration process; instructions for the same shall be provided on the official website at the time of registration.

Criterion 5 – Earlier admission at IITs: A candidate should **NOT** have been admitted to an IIT irrespective of whether or not the candidate continued in the program **OR** accepted a seat at an IIT by reporting “online” / at a “reporting centre” through JOSAA in the past. Candidates whose admission to IITs was cancelled (for whatever reason) after joining any IIT are also **NOT** eligible to appear for JEE (Advanced) 2021.

Candidates who have been admitted to a preparatory course in any of the IITs for the first time in 2020 can appear in JEE (Advanced) 2021.

The candidates who were allocated a seat in an IIT through JOSAA 2020 but (i) did not report “online” / 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, are eligible to appear for JEE (Advanced) 2021. However, in all of the above cases, the candidate is also required to simultaneously fulfil the conditions mentioned from Criterion 1 to Criterion 4.

Registration for JEE Advanced

The online application procedure of JEE Advanced comprises of the following three simple steps:

Step 1: Filling the application form

1. You must enter your JEE (Main) roll number, password and security pin.
2. You will have to choose a new password for JEE Advanced.

3. You will then be redirected to a page that contains your personal and academic details from the JEE Main application.
4. You have to mention the number of attempts and choose 3 exam centres (they must fall in the same IIT Zone).
5. You have to select a language of the question paper (Hindi or English).

Note: The JEE Advanced application cannot be withdrawn after registration has been completed.

Step 2: Uploading scanned certificates

Here's a list of documents for general category candidates:

- A colour photograph
- Class X certificate
- Class XII or equivalent examination certificate
- Scanned copy of the candidate's full signature
- Scanned copy of the candidate's left-hand thumb impression

Make sure to find out the [full list of documents](#) for JEE Advanced, along with other categories with specifications.

Step 3: Paying the registration fee

You can pay using:

- Debit Card/Internet Banking
- Cash at an SBI Bank
- International Debit or Credit Card (only for Dubai centre)

Make sure to find out about your [payment options](#) for JEE Advanced.

Application Fees for JEE Advanced

Fees for Examination Centres in India	
Female candidates	Rs. 1300 + GST

SC, ST and PwD candidates	Rs. 1300 + GST
All other candidates	Rs. 2600 + GST
Late fee	Rs. 500
Fees for Examination Centres Outside India (SAARC Countries)	
All candidates	\$160
Late fee	\$80
Fees for Examination Centres Outside India (Non- SAARC Countries)	
All candidates	\$300
Late fee	\$80

Important dates

Exam Dates for JEE Advanced

Registration Deadlines		
JEE Advanced 2019 Application Form	2nd May 2019*	11:59 PM
Registrations closes	4th May 2019*	11:59 PM
JEE Advanced Admit card will be available for download	5th to 12th May 2019*	10:00 AM on 5th May 9:00 AM on 12th May

Exam Dates		
JEE Advanced 2019 exam - Paper 1	12th May 2019*	9:00 AM to 12:00 PM
JEE Advanced 2019 Exam - Paper 2	12th May 2019*	2:00 PM to 5:00 PM
Result Dates		
Online display of ORS and scanned responses Request for review of scanned responses	15th to 18th May 2019*	-
JEE Advanced Answer Key	20th May 2019*	-
Collecting candidates' feedback on Answer Keys	21st to 25th May 2019*	-
JEE Advanced Result declaration	10th June 2019*	00:00 AM
Date for online registration of the Architecture Aptitude Test (AAT)	10th to 12th June 2019*	-
AAT exam date	16th June 2019*	-

AAT result announcement date	23rd June 2019*	-
Seat allotment	25th June to 15th July 2019*	-

* Dates are tentative and subject to change.

Results and cut-off

Cut-off for JEE Advanced

JEE Advanced has several cut-offs, both subject-wise and aggregate. These cut-offs vary across categories, as shown in the following table:

Rank List	Minimum Percentage of Marks in Each Subject	Minimum Percentage of Aggregate Marks
Common rank list (CRL)	10.0	35.0
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
OBC-NCL-PwD Rank list	5.0	17.5
SC-PwD rank list	5.0	17.5

Rank List	Minimum Percentage of Marks in Each Subject	Minimum Percentage of Aggregate Marks
ST-PwD rank list	5.0	17.5
Preparatory course rank lists	2.5	8.75

How to prepare

Preparation Tips for JEE Advanced

- **Focus:** Focus more on understanding topics rather than just formulae. This way, you can ensure that you imbibe the method used to arrive at the formulae. Doing so will also ensure that those formulae are always at your fingertips.
- **Organise your time:** Watch the time taken to solve questions. Subject-wise allocation of time will help you attempt the JEE Advanced paper within the given time constraint. This will also help in exam-simulation. While in the exam, you should be able to filter out the easy questions from the difficult ones, so you know the amount of time you need to allot to them.
- **Keep taking breaks:** Burnout should be avoided at all costs. Keep taking periodic breaks to [refresh yourself](#). Talk to friends once in a while, and don't bury your [social life](#) entirely.
- **Fulfil targets on a daily basis:** Your daily study plan must include learning and [revision](#). So assign daily goals for yourself and fulfil them. This will boost your confidence and avoid time wastage.
- **Practice solving sample papers:** Once you are thorough with a concept or chapter, solve previous years' papers (for the last 8-10 years at least). This will guide you through the transitions in question patterns and will prepare you to anticipate them. [Sample papers](#) from other sources, such as All India Test Series, will also help you in formulating strategies and eliminating weaknesses.
- **Subject-wise planning:** Based on your preference, select subject-wise topics and cover them each day. Remember, your weakness may be someone else's strength so never ignore a less favourite topic. Refer the latest JEE Advanced syllabus for your study plan.

- **Clarity in concepts:** Develop a clear thinking process so that the moment you see a question, you know the correct theory or formula to be used.
- **From basics to classics:** Always start from the fundamentals and then gradually move further. In this way, you can tackle even a difficult problem as you are well-versed with the concept. Jumping straightaway to an advanced problem is not a good idea.
- **Numericals are crucial:** Solving enough numericals is crucial to crack JEE Advanced. Practice at least 40-50 numericals for each day of your JEE Advanced preparations. With subjects like Maths, Physics and Chemistry, there is no dearth of numerical problems. Toppr brings you a huge question bank, with quality questions to test yourself and solutions to keep learning simultaneously.
- **Save your best for last:** Study more crucial sections of the syllabus in the beginning and push easier ones for later. Mark difficult portions in your notes so that revision towards the end becomes easier.
- **Discuss with your peers:** Discussing and clearing doubts with fellow aspirants and mentors can help you overcome your weaknesses. Interact with them without any hesitation to devise an efficient study plan for yourself.

Study Material for JEE Advanced

Make sure to get a hold of all the books that every [JEE Advanced aspirant](#) should have.

Physics

- H.C. Verma – Concepts of Physics, Volume I and II
- D.C. Pandey – Complete set of books
- I.E. Irodov – Problems in General Physics

Chemistry

- O.P. Tandon – Organic Chemistry, Inorganic Chemistry
- R.C. Mukherjee – Physical Chemistry
- R.K. Gupta – Organic Chemistry
- NCERT Textbooks – Inorganic Chemistry
- P. Bahadur – Physical Chemistry

Maths

- Arihant Publications – Amit Agarwal – All Sets
- S.L. Loney – Plane Coordinate Geometry
- Tata McGraw Hill's Publication – A Course in Mathematics for JEE Advanced
- Cengage Publications – Complete set of books for JEE Advanced Mathematics

Previous Years' Papers for JEE Advanced

Practising previous years' papers is important as this helps you simulate the real JEE Advanced exam. Here's the importance of solving [jee sample papers](#).

Frequently Asked Questions (FAQs)

Q1: Which colleges can I get into after giving JEE Advanced?

Ans: Here are some of the colleges that offer admission based on your JEE Advanced score:

Sr. No.	Colleges
1	Indian Institute of Technology, Banaras Hindu University
2	Indian Institute of Technology, Bhubaneswar
3	Indian Institute of Technology, Bombay
4	Indian Institute of Technology, Delhi
5	Indian Institute of Technology, Gandhinagar
6	Indian Institute of Technology, Goa
7	Indian Institute of Technology, Guwahati
8	Indian Institute of Technology, Hyderabad

Sr. No.	Colleges
9	Indian Institute of Technology, Indore
10	Indian Institute of Technology, Jodhpur