

# JEE ADVANCED - 2021 ANALYSIS

## An Analysis by Parishram Academy

### JEE Advanced 2021 Paper Analysis

Given below is the paper analysis of JEE Advanced Paper 1 and Paper 2 conducted on 3 October 2021.

#### JEE Advanced 2021 Paper 1 Analysis

According to student's reaction, In Chemistry section, questions were equally distributed from class 11th & 12th. While in Physics section, more questions were asked from class 11th. Mathematics section was the toughest, more weightage were given to class 11th syllabus. JEE Advanced Paper 1 was moderate in terms of difficulty level.

The table below represents the detailed difficulty level:-

Section	Difficulty Level
Mathematics	Moderate
Physics	Difficult to Moderate
Chemistry	Easy to Moderate

#### Paper 1: High Weightage Chapters

Section	High Weightage Chapters
Physics	Gravitation, Rotation, Waves, Mechanics
Chemistry	Atomic Structure, Organic Chemistry, Chemical Bonding, S,p,d, and f- block elements (5 questions)
Mathematics	Integration, Calculus, Geometry, Trigonometry

#### JEE Advanced 2021 Paper 2 Analysis

JEE Advanced Paper 2 was conducted from 2:30 to 5:30 PM. The overall exam was moderate to tough in terms of difficulty level. In Chemistry section, more weightage were given to class 12th syllabus.

The table below represents the detailed difficulty level of paper 2:-

Section	Difficulty Level
Mathematics	Moderately Tough
Physics	Moderate
Chemistry	Easy to Moderate

# JEE ADVANCED - 2021 ANALYSIS

## Paper 2: High Weightage Chapters

Section	High Weightage Chapters
Physics	Electromagnetic Induction, Fluids, Ray Optics, Current Electricity, Rotational Motion, Heat and Thermodynamics
Chemistry	Liquid Solutions, Organic chemistry, Aldehydes, p-block elements, and Atomic structure, Mole Concept and Electrochemistry
Mathematics	Calculus and Geometry

## JEE Advanced 2020 Paper Analysis

Given below is the paper analysis of JEE Advanced Paper 1 and Paper 2 conducted on 27th September 2020.

### JEE Advanced 2020 Paper 1 Analysis

- Shift Timings – 9.00 AM to 12.00 PM.
- Overall Difficulty – Moderate to Difficult
- Majority of candidates reported that Physics was the toughest section. Topics, where students faced difficulty, were – thermodynamics, magnetism and rotation.
- Many students said the Chemistry section was easiest. Questions were based on NCERT pattern.
- Few questions of Inorganic chemistry were tougher than expected.
- Mathematics was moderate. However, questions were time-consuming and required good understanding of concepts.
- Topics like Algebra and Calculus were asked in Maths which students found difficult.

### JEE Advanced 2020 Paper 2 Analysis

- Shift Timings – 2:30 PM to 5:30 PM
- Overall Difficulty – Difficult
- Maths and Physics was pretty hard compared to Paper 1. Questions were asked from similar topics only.
- Chemistry was easy in Paper 2. Questions were both numerical and fact-based. All 3 subjects had section 3 with numerical based questions only.
- Students reported that Paper 2 was much more difficult than Paper 1 as Section 1 was completely numerical based (without any options) with a single digit integer answer in all the subjects. In addition to this, a wrong answer here had negative marking too.

## JEE Advanced 2022 Marking Scheme

The marking scheme for JEE Advanced is not defined by the conducting authority before the examination.

2nd Floor, Vijayshree Parate Sabhagruh Opp Orange City, [www.parishramacademy.com](http://www.parishramacademy.com)

Mobile: 9028110555 [www.parishrapublications.com](http://www.parishrapublications.com)

Mobile: 9028661555 iparishram App Email: [info@parishramacademy.com](mailto:info@parishramacademy.com)

## JEE ADVANCED - 2021 ANALYSIS

- The details of the marking scheme are provided in “Instructions to Candidates” during the examination only.
- This makes it even more difficult for students to prepare for the JEE Advanced 2022.

To get an idea about the marking scheme, candidates can check the previous year paper analysis given below. According to the JEE Advanced 2020 Question Paper, the latest marking scheme has been given below. Although, it might change for the next session of 2022.

### Marking Scheme for Paper 1

Paper 1 consists of Multiple-Choice Questions (MCQs) with 1 answer, MCQs with more than 1 answer and Numerical Answer Type questions for each subject.

Section	Question Type	Marks awarded for correct response	Negative Marking
1	Multiple Choice Question with 1 correct answer	+3	-1
2	Multiple Choice Question with more than 1 correct answer	+4 if all the options chosen are correct +3 if three options chosen but all four are correct +2 if two correct options chosen but one missed out +1 if only one correct option chosen	-1
3	Numerical Value Type	+4	0

### Marking Scheme for Paper 2

Paper-2 consists Multiple Choice Questions with more than 1 answer, Numerical Answer type questions and questions having single digit integer answers.

Section	Question Type	Marks awarded for correct response	Negative Marking
1	Single Digit Integer Answer (no options)	+3	-1
2	Multiple Choice Question with more than 1 correct answer	+4 if all the options chosen are correct +3 if three options chosen but all four are correct +2 if two correct options chosen but one missed out +1 if only one correct option chosen	-2
3	Numerical Value Based Questions	+4	0

## JEE Advanced 2019 Paper Analysis

As the JEE Advanced was conducted in **online mode** (Computer-based test), it was not possible to get an accurate idea of IIT Roorkee’s JEE Advanced Paper Analysis. Although, the candidates had a similar opinion and the same is given below-

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## JEE ADVANCED - 2021 ANALYSIS

- Mathematics was long and difficult for both papers. It was toughest among all of the sections.
- Chemistry was easy compared to others.
- Physics was average but had a few tricky questions.
- Paper 1 was relatively harder than Paper 2

Subject	Paper 1 Analysis	Paper 2 Analysis
Physics	The questions asked in the paper were moderately tough. Most of the questions asked were from Chapter 11 and 12.	Difficult
Chemistry	Moderate difficulty level. Most of the questions asked were from Inorganic Chemistry.	Moderate
Mathematics	The paper was Difficult. Most of the questions asked were from Algebra and Geometry.	Moderately Difficult

### JEE Advanced Paper Analysis 2019: Paper 1 Quick Analysis

- The paper was relatively difficult in comparison to the previous year's paper.
- Most of the questions asked in Paper 1 were moderate in nature.
- Overall, the Physics portion was comparatively easier than Chemistry and Mathematics.
- Mathematics part was relatively difficult in the examination.
- The level of difficulty in Paper 1 was marked moderate with maximum weightage given to class 12 syllabus.
- The questions asked from Chemistry were not theoretical and were based on calculations and needed rigorous calculations.

Subject	Easy	Moderate	Difficult	Total
Physics	7	9	2	18
Chemistry	3	8	7	18
Mathematics	6	4	8	18
Total	16	21	17	54

### JEE Advanced Paper Analysis 2019: Paper 2 Quick Analysis

- The difficulty level of the JEE Advanced Paper- 2 was moderate.
- The questions asked from Physics and Chemistry were relatively easy as compared to Mathematics.
- Mathematics part was tough and lengthy. Most of the questions were asked from Matrices and Differential Equations which made the paper lengthy.
- Physics section was easy to moderate in nature.
- The number of questions asked in Chemistry were from Organic and Inorganic Chemistry. Very few questions were asked from Physical Chemistry.

## JEE ADVANCED - 2021 ANALYSIS

Subject	Easy	Moderate	Difficult	Total
Physics	6	8	4	18
Chemistry	0	9	9	18
Mathematics	4	7	7	18
Total	10	24	20	54

### JEE Advanced 2019 Paper Analysis- Detailed

- JEE Advanced 2019 was conducted by IIT Roorkee on May 27, 2019, and was taken by **approximately 1.70 lakh candidates**.
- The maximum marks that could be scored by the candidates were **372 marks**.
- Students were awarded **4 marks for a correct answer** and **a mark was deducted for every incorrect answer**.

### JEE Advanced 2019 Subject-wise Paper Analysis

This section caters to the subject wise analysis of JEE Advanced 2019 Paper.

#### Chemistry

The Chemistry section was the easiest in both papers 1 and 2. The aim of the paper was to test the concepts of the candidates where the concentration of the question was higher from organic and inorganic chemistry. The least number of questions were asked from the physical chemistry.

#### Unit-wise Marks Distribution

Units	No of Questions	Weightage of Marks
Inorganic Chemistry-I	4	11.29%
Chemical Bonding	1	2.42%
p-block	3	8.87%
Inorganic Chemistry-II	6	16.94%
Coordination Compounds	1	2.42%
d-block & f-block Elements	2	6.45%
Qualitative Analysis	1	2.42%
Metallurgy	2	5.65%
Organic Chemistry-I	1	2.42%
General Organic Chemistry- II	1	2.42%
Organic Chemistry-II	11	31.45%
Aromatic Compounds	2	5.65%
Carbonyl compounds	3	8.06%
Organic Reaction Mechanism 4	1	3.23%
Stereoisomerism	1	2.42%
Biomolecules	1	3.23%
Grignard Reagent, Reduction, Oxidation & Hydrolysis	2	5.65%

## JEE ADVANCED - 2021 ANALYSIS

Polymers	1	3.23%
Physical Chemistry-I	10	28.23%
Atomic Structure & Nuclear Chemistry	4	11.29%
Chemical Bonding	1	3.23%
Chemical Equilibrium	1	2.42%
Mole Concept	2	4.84%
Thermodynamics and Thermochemistry	1	3.23%
Gaseous State	1	3.23%
Physical Chemistry-II	4	9.68%
Chemical Kinetics	2	4.84%
Solution & Colligative Properties	1	2.42%
Surface Chemistry	1	2.42%

### Physics

The Physics section was moderately difficult but very lengthy. The questions were concept and application-based. The questions had a higher concentration of questions from Thermodynamics, Optics and Thermodynamics and Electrostatics.

### Unit-wise Marks Distribution

Topics	No. of Questions	Weightage of Marks
Electrodynamics	8	23.39%
Capacitance	2	5.65%
Electromagnetic Induction	2	5.65%
Electrostatics	3	8.87%
Current Electricity	1	3.23%
Heat and Thermodynamics	6	16.13%
KTG and Thermodynamics	5	13.71%
Calorimetry & Thermal Expansion	1	2.42%
Mechanics	9	25.00%
Centre of Mass	1	3.23%
Error in Measurement	1	2.42%
Gravitation	1	2.42%
Right Body Dynamics	1	3.23%
Surface Tension	1	3.23%
Work, Power and Energy	1	2.42%
Electricity & Viscosity	1	2.42%
Projectile Motion	1	2.42%
Unit & Dimension	1	3.23%
Modern Physics	4	10.48%
Modern Physics	2	5.65%

## JEE ADVANCED - 2021 ANALYSIS

Nuclear Physics	2	4.84%
Optics	5	14.52%
Geometrical Optics & Physical Optics	4	11.29%
Wave Optics	1	3.23%
SHM & Waves	4	10.48%
Sound Waves	1	2.42%
String Wave	2	4.84%
SHM	1	3.23%

### Mathematics

The Mathematics section ranged from moderate to difficult level. The paper was quite lengthy as the section consisted of Algebra, Coordinate Geometry, Integral Calculus. Just a few questions were based on Probability, Quadratic Equations and Sequence & Series.

### Unit-wise Marks Distribution

Units	No. of Questions	Weightage of Marks
Algebra	1	2.42%
Complex Numbers	2	4.84%
Coordinate Geometry	5	12.90%
Circle	4	9.68%
Ellipse	1	3.23%
Differential Calculus	5	14.52%
Functions	2	4.84%
Application of Derivatives	2	6.45%
Continuity and Derivability	1	3.23%
Integral Calculus	6	16.94%
Definite Integration	5	13.71%
Different Equation	1	3.23%
Matrices and Determinants	4	12.10%
Permutations and Combinations	2	4.84%
Probability	2	5.65%
Quadratic Equation	1	3.23%
Sequence and Series	1	2.42%
Trigonometry	3	8.87%
Solution of Triangle	1	3.23%
Inverse Trigonometric Function	1	2.42%
Trigonometric ratio and Identities	1	3.23%
Vector and 3D	4	11.29%

# JEE ADVANCED - 2021 ANALYSIS

## JEE Advanced 2018 Paper Analysis

JEE Advanced 2018 was conducted in **IIT Kanpur** on May 20, 2018. The maximum marks that could be scored by the candidates were **360 marks**. Students were awarded 4 marks for a correct answer and a mark was deducted for every incorrect answer. The **questions in the Chemistry section were more difficult** in comparison to the other two sections.

### Class-wise Marks Distribution

The concentration of questions were more from class 12 than class 11. Let us see the marks distribution in the following table.

Subject	Class 11		Class 12		Total number of questions	
	No. of Questions	Marks	No. of Questions	Marks	No. of Questions	Marks
Chemistry	7	23	29	97	36	120
Mathematics	15	49	21	71	36	120
Physics	22	73	14	47	36	120
Total	44	145	64	215	108	360

### JEE Advanced 2018 Paper Analysis – Level of Difficulty

Most of the questions in the JEE Advanced paper 2018 were moderately difficult. Lets see the distribution of the questions and marks in the question paper according to the levels of difficulty.

Subject	Easy		Moderate		Tough	
	No. of Questions	Marks	No. of Questions	Marks	No. of Questions	Marks
Chemistry	5	16	13	44	18	60
Mathematics	13	40	11	36	12	44
Physics	13	44	13	43	10	33
Total	31	100	37	123	40	137

### JEE Advance 2018 Subject-wise Paper Analysis

This section caters to the subject-wise paper analysis.

#### Chemistry

The Chemistry section was difficult in both papers 1 and 2. The concentration of the question was higher from organic and physical chemistry. The least number of questions were asked from organic chemistry. Furthermore, various questions were asked out of NCERT books too.

#### Unit-wise Marks Distribution



## JEE ADVANCED - 2021 ANALYSIS

Units	No of Questions	Weightage of Marks
Inorganic Chemistry-I	3	9.17%
Chemical Bonding	1	2.50%
p-block	2	6.67%
Inorganic Chemistry-II	7	20.00%
Coordination Compounds	5	14.17%
Qualitative Analysis	1	3.33%
Metallurgy	1	2.50%
Organic Chemistry-II	12	33.33%
Aromatic Compounds	3	9.17%
Carbonyl compounds	1	2.50%
Organic Reaction Mechanism 4	2	5.00%
Stereoisomerism	1	2.50%
Organic Reaction Mechanism 3	1	3.33%
Biomolecules	1	3.33%
Carboxylic Acid and their Derivatives	3	7.50%
Physical Chemistry-I	7	19.17%
Gaseous State	1	2.50%
Ionic Equilibrium	2	5.00%
Thermodynamics	3	9.17%
Equivalent Concept	1	2.50%
Physical Chemistry-II	7	18.33%
Chemical Kinetics	2	5.83%
Electrochemistry	2	5.00%
Solid State	1	2.50%
Solution and Colligative Properties	2	5.00%

### Physics

The Physics section was moderately difficult. The questions were mostly analytical and application-based in nature.

### Unit-wise Marks Distribution

Units	No. of Questions	Weightage of Marks
Electrodynamics	8	22.50%
Capacitance	1	2.50%
Electromagnetic Field	2	5.83%
Electromagnetic Induction	1	3.33%
Electrostatics	3	8.33%
Current Electricity	1	2.50%
Heat and Thermodynamics	4	10.83%

## JEE ADVANCED - 2021 ANALYSIS

Heat Transfer	1	2.50%
KTG and Thermodynamics	3	8.33%
Mechanics	15	41.67%
Error in Measurement	3	7.50%
Gravitation	1	2.50%
Right Body Dynamics	3	8.33%
Surface Tension	1	3.33%
Work, Power and Energy	1	3.33%
Electricity & Viscosity	2	5.83%
Unit & Dimension	2	5.00%
Circular Motion	1	3.33%
Mathematical Tool	1	2.50%
Modern Physics	3	8.33%
Nuclear Physics	1	3.33%
Photoelectric Effect	1	2.50%
Bohr Atomic Model	1	2.50%
Optics	2	5.83%
Geometrical Optics & Physical Optics	2	5.83%
SHM & Waves	3	8.33%
Sound Waves	2	5.83%
SHM	1	2.50%
Mathematical Tools	1	2.50%
Projectile Motion	1	2.50%

### Mathematics

The difficulty of the Mathematics section was moderate. However, there were some questions that were challenging and time consuming. When compared to the other sections, this section was considered to be the easiest.

### Unit-wise Marks Distribution

Units	No. of Questions	Weightage of Marks
Algebra	1	2.50%
Binomial Theorem	1	2.50%
Complex Numbers	2	6.67%
Coordinate Geometry	5	14.17%
Circle	3	8.33%
Hyperbola	1	2.50%
Ellipse	1	3.33%
Differential Calculus	5	14.17%
Functions	2	5.00%

## JEE ADVANCED - 2021 ANALYSIS

Limits, Continuity and Differentiability	1	2.50%
Application of Derivatives	1	3.33%
Methods of Differentiation	1	3.33%
Integral Calculus	8	22.50%
Definite Integration	3	7.50%
Different Equation	5	15.00%
Matrices and Determinants	2	5.83%
Permutations and Combinations	2	5.00%
Probability	2	5.00%
Sequence and Series	1	2.50%
Trigonometry	3	8.33%
Solution of Triangle	1	3.33%
Inverse Trigonometric Function	1	2.50%
Trigonometric ratio and Identities	1	2.50%
Vector and 3D	4	10.83%
Fundamentals of Mathematics	1	2.50%

### JEE Advanced 2017 Paper Analysis

JEE Advanced 2017 was conducted in **IIT Madras** on May 21, 2017. The maximum marks that could be scored by the candidates were **366 marks**. Students were awarded 4 marks for a correct answer and a mark was deducted for every incorrect answer. The question paper was moderate on an average level.

#### Class-wise Marks Distribution

The concentration of questions were more from class 12 than class 11. Let us see the marks distribution in the following table.

Subject	Class 11		Class 12		Total number of questions	
	No. of Questions	Marks	No. of Questions	Marks	No. of Questions	Marks
Chemistry	14	48	22	74	36	122
Mathematics	14	46	22	76	36	122
Physics	17	57	19	65	36	122
Total	45	151	63	215	108	366

#### JEE Advanced 2017 Paper Analysis – Level of Difficulty

Most of the questions in the JEE Advanced paper 2017 were moderately difficult. The physics section was between medium to difficult. The chemistry section was difficult due to application-based questions. The mathematics section was comparatively easier. It is said that

## JEE ADVANCED - 2021 ANALYSIS

the most difficult JEE Advanced Paper was either 2016 or 2017. Lets see the distribution of the questions and marks in the question paper according to the levels of difficulty.

Subject	Easy		Moderate		Tough	
	No. of Questions	Marks	No. of Questions	Marks	No. of Questions	Marks
Chemistry	9	28	10	36	17	58
Mathematics	12	42	18	58	6	22
Physics	16	52	15	53	5	17
Total	37	122	43	147	28	97

### JEE Advanced 2017 Subject-wise Paper Analysis

This section caters to the subject-wise paper analysis.

#### Chemistry

The chemistry section was difficult in both papers 1 and 2. The questions were mainly application-based. The concentration of the question was higher in inorganic chemistry.

#### Unit-wise Marks Distribution

Units	No of Questions	Weightage of Marks
Chemical bonding	6	18.03%
Coordination Compounds	1	3.28%
p-Block	2	4.92%
General Organic Chemistry II	1	2.46%
d & f Block Elements	1	2.46%
Alkyl Halide, Alcohol & Ether	3	9.02%
General Organic Chemistry	1	2.46%
Carbonyl Compounds	3	8.20%
Aromatic Compounds	3	7.38%
Atomic and Nuclear Chemistry	3	7.38%
IUPAC & Isomerism	1	3.28%
Mole Concept	1	2.46%
Chemical Equilibrium	1	3.28%
Chemical Kinetics	1	3.28%
Thermodynamics	2	5.74%
Solid State	1	2.46%

## JEE ADVANCED - 2021 ANALYSIS

Electrochemistry	2	4.92%
Surface Chemistry	1	3.28%
Solution and Colligative Properties	2	5.74%

### Physics

The Physics section was moderately difficult. The questions were conceptual and formula-based. Some questions were time consuming.

### Unit-wise Marks Distribution

Topics	No. of Questions	Weightage of Marks
Electromagnetic Field	6	16.39%
Alternating Current	2	6.56%
Electrostatics	1	3.28%
Capacitance	2	4.92%
Electromagnetic Induction	1	3.28%
Centre of Mass	1	3.28%
Heat and Thermodynamics	5	13.93%
Error in Measurement	1	2.46%
Rectilinear Motion and Vectors	1	2.46%
Mathematical Tools	1	2.46%
Gravitation	1	2.46%
Right Body Dynamics	5	13.93%
Surface Tension	1	2.46%
Rigid Body Dynamics	5	13.93%
Optics	3	9.02%
Modern Physics	3	7.38%
SHM Waves	2	5.74%

### Mathematics

The difficulty of the Mathematics section was moderate. However, there were some questions that were challenging and time taking. When compared to the other sections, this section was considered easy. Most of the questions were asked from Calculus and Algebra.

### Unit-wise Marks Distribution

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## JEE ADVANCED - 2021 ANALYSIS

Units	No. of Questions	Weightage of Marks
Algebra	1	2.46%
Complex Numbers	1	3.28%
Coordinate Geometry	6	16.39%
Differential Calculus	6	18.03%
Integral Calculus	7	19.67%
Permutations and Combinations	2	4.92%
Probability	2	5.74%
Sequence and Series	1	2.46%
Trigonometry	1	3.28%
Quadratic Equation	2	4.92%
Matrix and Determinants	4	11.48%
Vector and 3D	3	7.38%