

JEE Advanced 2019 Paper Analysis

The Joint Entrance Examination (JEE) Advanced 2019 was conducted on 27th of May 2019. Over 170000 students who had aced the JEE Main Examination appeared in JEE Advanced 2019. This exam is conducted by IIT Roorkee this year. The performance of a candidate in this examination forms the basis for admission to the bachelor's, integrated master's and dual degree programs (entry at the 10+2 level) in all the Indian Institutes of Technology (IITs) across the country. The examination consists of two papers, Paper 1 and Paper 2, each of three hours duration. While Paper 1 is scheduled to be from 9 am to 12 pm, Paper 2 is conducted from 2 pm to 5 pm. The results for JEE Advanced 2019 will be available on June 14, 2019.

The paper conducting method as well as the format has changed compared to last year. This is the second time this exam is conducted on a computer (CBT Mode). The changes in paper format are discussed below in detail.

Paper Format Analysis - Paper 1

The Paper-1 of JEE Advanced 2019 was conducted from 9am to 12pm. In terms of paper format, Paper 1 of JEE Advanced 2019 differed significantly from its counterpart last year both in terms of section as well as the weight age given to each section. This year single correct questions have been added instead of passage type questions. While the total number of questions in the entire paper remained the same as last year at 18, there are differences in the section wise distribution of these questions. The maximum marks achievable in this paper are 62 in each subject when compared to 60 marks in each subject last year. We present a section wise analysis in the following pages.

Paper 1: Section 1

SECTION 1 (Maximum Marks: 12)

- This section contains **FOUR (04)** questions.
- Each question has **FOUR** options. **ONLY ONE** of these four options is the correct answer.
- For each question, choose the option corresponding to the correct answer.
- Answer to each question will be evaluated according to the following marking scheme:
Full Marks : +3 If **ONLY** the correct option is chosen;
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);
Negative Marks : -1 In all other cases.

Section 1 of JEE Advanced 2019 Paper I consisted of single correct questions. This pattern has been introduced back after 2016. This format has replaced passage type questions from last year. There were 4 such questions with full mark of +3 and a negative marking of -1. Of a total of 62 marks, nearly 20% of weightage is given to this section. This suggests that this section should in terms of time devoted for this section after section 2 and section 3.

Paper 1: Section 2

SECTION 2 (Maximum Marks: 32)

- This section contains **EIGHT (08)** questions.
- Each question has **FOUR** options. **ONE OR MORE THAN ONE** of these four option(s) is(are) correct answer(s).
- For each question, choose the option(s) corresponding to (all) the correct answer(s).
- Answer to each question will be evaluated according to the following marking scheme:
Full Marks : +4 If only (all) the correct option(s) is(are) chosen;
Partial Marks : +3 If all the four options are correct but **ONLY** three options are chosen;
Partial Marks : +2 If three or more options are correct but **ONLY** two options are chosen and both of which are correct;
Partial Marks : +1 If two or more options are correct but **ONLY** one option is chosen and it is a correct option;
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);
Negative Marks : -1 In all other cases.
- For example, in a question, if (A), (B) and (D) are the **ONLY** three options corresponding to correct answers, then
choosing **ONLY** (A), (B) and (D) will get +4 marks;
choosing **ONLY** (A) and (B) will get +2 marks;
choosing **ONLY** (A) and (D) will get +2 marks;
choosing **ONLY** (B) and (D) will get +2 marks;
choosing **ONLY** (A) will get +1 mark;
choosing **ONLY** (B) will get +1 mark;
choosing **ONLY** (D) will get +1 mark;
choosing no option (i.e. the question is unanswered) will get 0 marks; and
choosing any other combination of options will get -1 mark.

Section 2 of JEE Advanced 2019 Paper-1 corresponded to the section 1 of JEE Advanced 2018 Paper-1 with the only change being the total number of questions increased from 6 to 8. It is a **multiple correct answer** section with full marks of +4, partial marks of +1 for each correct option and negative marking of -2 on selection of wrong option regardless of selecting a correct option also. There were **six** such questions in JEE Advanced 2018's section 1, while there are **eight** such questions this year in section 2. This is a high risk high reward category of questions. While there is a temptation to mark all correct answers to get full marks, the penalty is very high on wrong answers so there is no reason to guess answers in this section. Of a total of 62 marks, around 50% of total weight was given to this section, numerically 32. This implies that maximum time was to be devoted to this section for each subject.

Paper 1: Section 3

SECTION 3 (Maximum Marks: 18)

- This section contains **SIX (06)** questions. The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value of the answer using the mouse and the on-screen virtual numeric keypad in the place designated to enter the answer. If the numerical value has more than two decimal places, **truncate/round-off** the value to **TWO** decimal places.
- Answer to each question will be evaluated according to the following marking scheme:
Full Marks : +3 If **ONLY** the correct numerical value is entered;
Zero Marks : 0 In all other cases.

Section 3 of JEE Advanced 2019 Paper-1 is similar to section 3 of JEE Advanced 2018 Paper-2 but varied in terms of number of questions asked. . It is a **numerical value UPTO SECOND DECIMAL PLACE** section with no partial or negative marking and full marks of +3. Compared to the single digit integer type section last year, this section can be considered more difficult. There were **six** such questions in this category, compared to **eight** numerical value type questions last year. There is no use in guessing the answer, and this type of questions very closely resembles the subjective type questions in their nature. Of a total of 62 marks, around 30% of the total weight was given to this section, numerically 18. This implies that this section deserved second priority in terms of time consumed.

Paper Format Analysis –Paper II

The Paper-2 of JEE Advanced 2019 was conducted from 2pm to 5pm. In terms of paper format, Paper 2 of JEE Advanced 2019 was similar to its counterpart last year. The total number of questions as well as the various sections remained the same as last year namely 18 questions and 3 sections, but there was variation in weight age given to sections.. The maximum marks achievable in this paper are 62 in each subject when compared to 60 marks in each subject last year. We present a section wise analysis in the following pages.

Paper 2: Section 1

SECTION 1 (Maximum Marks: 32)	
•	This section contains EIGHT (08) questions.
•	Each question has FOUR options. ONE OR MORE THAN ONE of these four option(s) is(are) correct answer(s).
•	For each question, choose the option(s) corresponding to (all) the correct answer(s).
•	Answer to each question will be evaluated according to the following marking scheme:
Full Marks	: +4 If only (all) the correct option(s) is(are) chosen;
Partial Marks	: +3 If all the four options are correct but ONLY three options are chosen;
Partial Marks	: +2 If three or more options are correct but ONLY two options are chosen and both of which are correct;
Partial Marks	: +1 If two or more options are correct but ONLY one option is chosen and it is a correct option;
Zero Marks	: 0 If none of the options is chosen (i.e. the question is unanswered);
Negative Marks	: -1 In all other cases.
•	For example, in a question, if (A), (B) and (D) are the ONLY three options corresponding to correct answers, then
	choosing ONLY (A), (B) and (D) will get +4 marks;
	choosing ONLY (A) and (B) will get +2 marks;
	choosing ONLY (A) and (D) will get +2 marks;
	choosing ONLY (B) and (D) will get +2 marks;
	choosing ONLY (A) will get +1 mark;
	choosing ONLY (B) will get +1 mark;
	choosing ONLY (D) will get +1 mark;
	choosing no option (i.e. the question is unanswered) will get 0 marks; and
	choosing any other combination of options will get -1 mark.

Section 1 of JEE Advanced 2019 Paper-2 is similar to its counterpart last year with the only change being the number of questions increased from 6 to 8.. It is a **multiple correct answer** section with full marks of +4, partial marks of +1 for each correct option and negative marking of -2 on selection of wrong option regardless of selecting a correct option also. Just like Paper-1, there were **eight** such questions. Of a total of 62 marks, around 50% of total weight was given to this section, numerically 24. This implies that maximum time was to be devoted to this section for each subject.

Paper 2: Section 2

SECTION 2 (Maximum Marks: 18)

- This section contains **SIX (06)** questions. The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value of the answer using the mouse and the on-screen virtual numeric keypad in the place designated to enter the answer. If the numerical value has more than two decimal places, **truncate/round-off** the value to **TWO** decimal places.
- Answer to each question will be evaluated according to the following marking scheme:
Full Marks : +3 If **ONLY** the correct numerical value is entered;
Zero Marks : 0 In all other cases.

Section 2 of JEE Advanced 2019 Paper-2 is identical to section 3 in Paper 1. It is a **numerical value UPTO SECOND DECIMAL PLACE** section with no partial or negative marking and full marks of +3. There were **six** such questions in this category. Again, there is no use in guessing the answer because these questions very closely resemble the subjective type questions in their nature. Of a total of 62 marks, nearly 30% of the total weight was given to this section, numerically 18. This implies that this section should be given focus after section-I.

Paper 2: Section 3

SECTION 3 (Maximum Marks: 12)

- This section contains **TWO (02)** List-Match sets.
- Each List-Match set has **TWO (02)** Multiple Choice Questions.
- Each List-Match set has two lists: **List-I** and **List-II**.
- **List-I** has **Four** entries (I), (II), (III) and (IV) and **List-II** has **Six** entries (P), (Q), (R), (S), (T) and (U).
- **FOUR** options are given in each Multiple Choice Question based on **List-I** and **List-II** and **ONLY ONE** of these four options satisfies the condition asked in the Multiple Choice Question.
- Answer to each question will be evaluated according to the following marking scheme:
Full Marks : +3 If **ONLY** the option corresponding to the correct combination is chosen;
Zero Marks : 0 If none of the options is chosen (i.e., the question is unanswered);
Negative Marks : -1 In all other cases.

Section 3 of JEE Advanced 2019 Paper-2 is similar to section 3 of JEE Advanced 2018 Paper-2. It is a **matching type** section where based on situations described in two tables, two questions each were asked with +3 marks for correct answer and a penalty of -1 for incorrect answers. There are total **four** questions in this category compared to **six** in last year's exam. This is a moderate risk moderate reward category of questions. The penalty for wrong answer is not high enough to deter guessing, and 1 correct guess out of 4 can settle the account. Of a total of 62 marks this section had a weight of 12. This implies that this section was to be devoted least amount of time.

Class-wise Distribution Analysis

Following table illustrates the distribution of questions across class 11th and 12th for the three subjects. It is apparent from the numbers, class 12th had a bigger chunk of questions overall, but Physics subject had equal questions from class 11th topics.

Subject / Level	Physics	Chemistry	Maths	Total
11 th	18	15	14	48
12 th	18	21	22	60

Overall Difficulty Analysis

We divide the questions in 3 categories: easy, medium and difficult to analyze the overall difficulty level of the paper and come up with a selection probability analysis.

Subject / Level	Easy	Medium	Difficult	Total
Physics	0	11	25	36
Chemistry	12	18	6	36
Mathematics	4	8	24	36
Total	17	67	24	108

Physics and Mathematics can be considered difficulty compared to Chemistry, which had a higher percentage of questions in the easy and medium category. Overall, our experts feel that the paper was more difficult compared to last year and hence we should expect an overall decrease in marks which will be scored by aspirants.

Jee Advanced cutoff across years

Category / Year	2016	2017	2018	2019
General	20%	35%	35%	35%
OBC	18%	31.5%	31.5%	31.5%
SC	10%	17.5%	17.5%	17.5%
ST	10%	17.5%	17.5%	17.5%

Even though the cutoff according to the brochure is the same as the one that we saw last year, it is our opinion that the cutoff will be revised lower this year because of difficulty level as well as change in exam conduction method.

Expected ranks at different marks

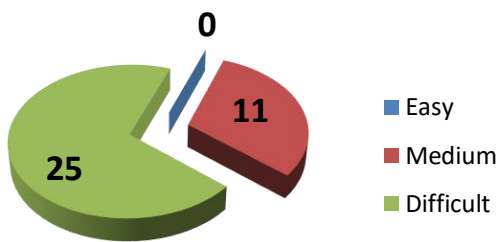
Rank	1	10	100	500	1000	2500	5000	10000
Approx Marks	330	318	270	237	215	189	163	138

Subject wise analysis

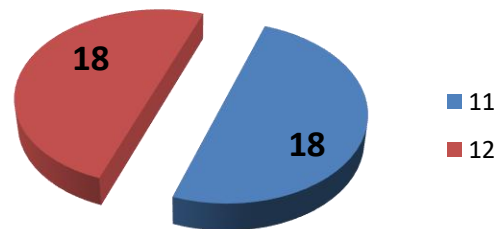
We present in the following pages a break up of questions for each of the subjects across topics, classes and difficulty

Physics

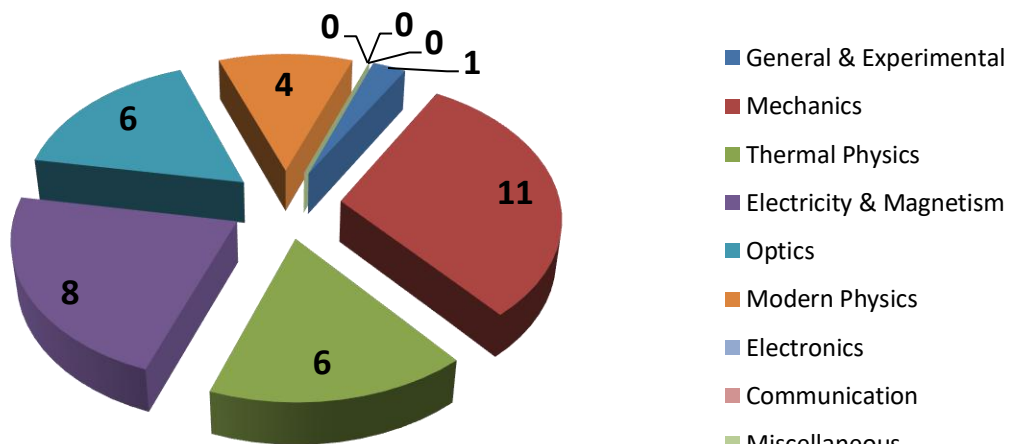
Physics Difficulty Wise Analysis Overall



Physics Classwise Distribution Overall

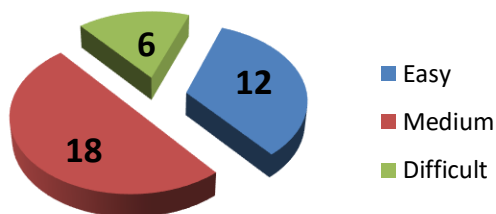


Physics Chapter wise Distribution Overall

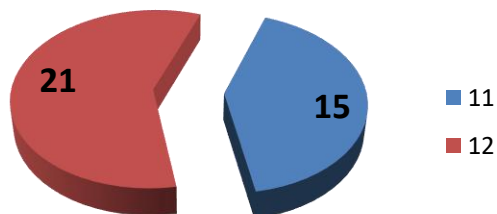


Chemistry

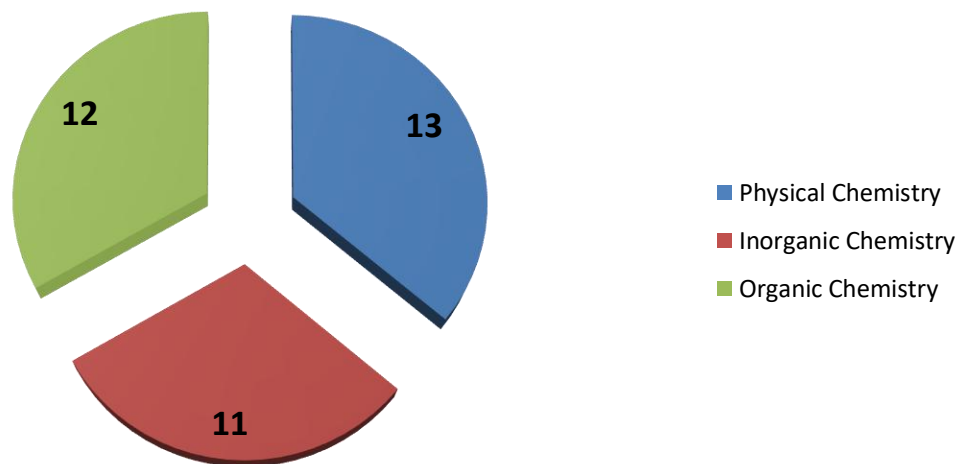
Chemistry Difficulty wise Analysis Overall



Chemistry Classwise Analysis Overall

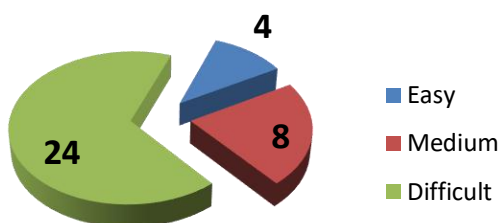


Chemistry Sectionwise Distribution Overall

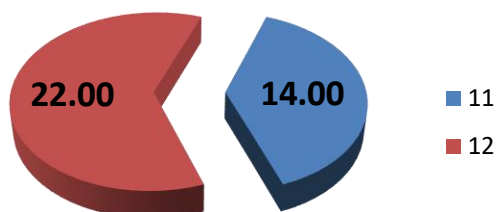


Mathematics

Maths Overall Difficulty



Classwise Distribution Maths Overall



Chapterwise Distribution Overall

