

# JEE ADVANCED

2015

## TOPIC WISE ANALYSIS



# JEE Advanced 2015 Paper

<b>Exam Conducting Body</b>	<b>IIT Bombay</b>
<b>Exam Date</b>	<b>24th May, 2015</b>
<b>Exam Mode</b>	<b>Computer-Based Online Test</b>
<b>Exam Paper and Duration</b>	<b>2 papers (Paper 1 and Paper 2) of 3 hours each</b>
<b>Subjects or Sections</b>	<b>Physics, Chemistry, Maths</b>
<b>Total Marks</b>	<b>504 Marks Paper 1- 264 Marks &amp; Paper 2- 240 Marks 168 marks per subject</b>
<b>Question Types</b>	<b>MCQs, Numerical Problems, Comprehension, list match sets</b>

# JEE Advanced 2015 Paper Marking Scheme

The marking scheme that was followed in the JEE Advanced 2015 Paper I and II are as follows:

Section	Paper I				Paper II			
	Question Pattern	Marking Scheme	No. of Q.	Total Marks	Question Pattern	Marking Scheme	No. of Q.	Total Marks
1	Numerical Answer Type	+4 for correct, No Negative Marking	8	32	Numerical Answer Type	+4 for correct, No Negative Marking	8	32
2	Multiple Answers Correct Type	+4 for correct, -2 for wrong	10	40	Multiple Answers Correct Type	+4 for correct, -2 for wrong	8	32
3	Matching Columns Type	+2 for each of 4 Correct, -1 for each wrong	2	16	Paragraph Type Multiple Answer Correct	+4 for Correct, -2 for wrong	4	16

# JEE Advanced 2015 Paper: Distribution of Questions

The distribution of questions in both Paper I and Paper II is given below:

Subject	Class 11		Class 12		Total	
	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Chemistry	13	56	27	126	40	168
Mathematics	16	72	24	96	40	168
Physics	16	68	24	100	40	168
Grand Total	45	196	75	322	120	504

# JEE Advanced 2015: Expert's Viewpoint

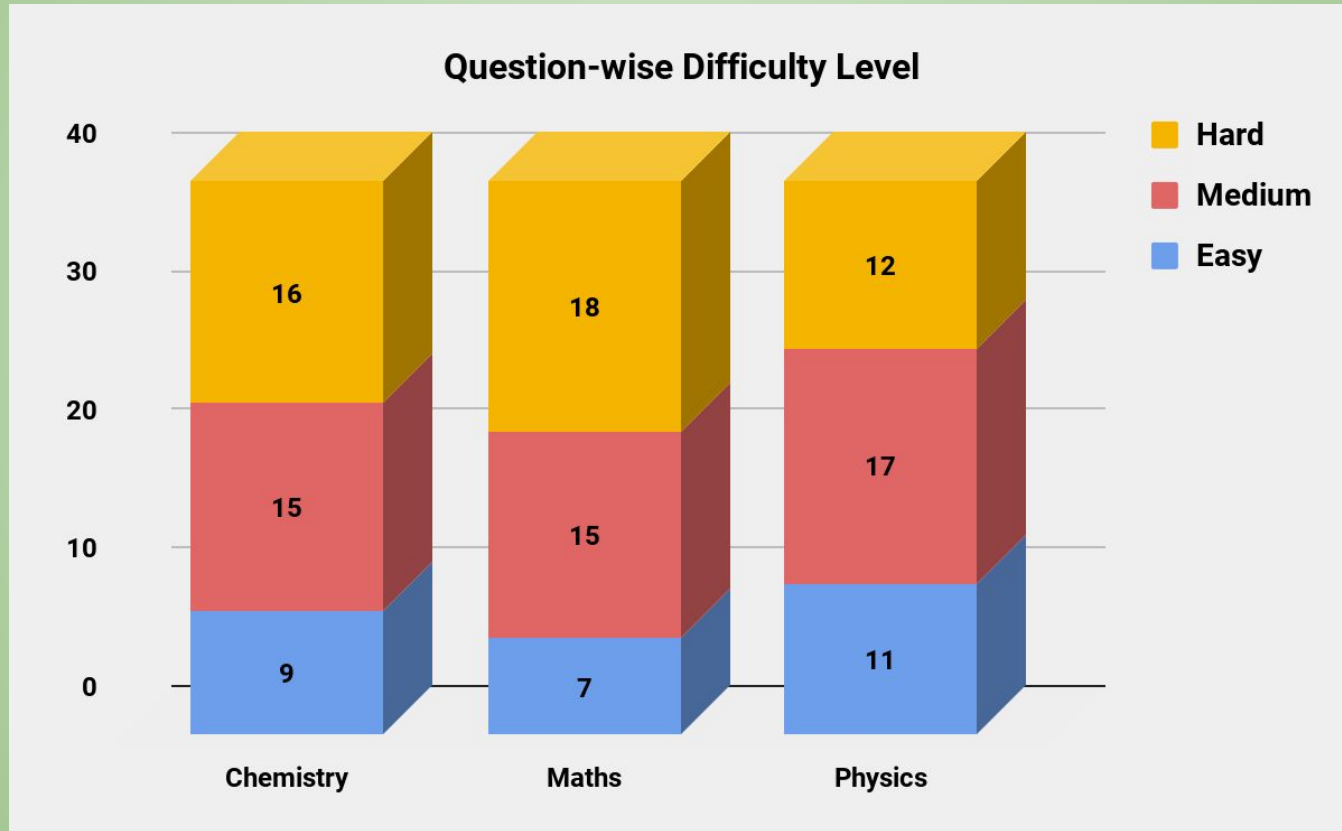
As per the experts, the two papers were set in the following manner:

Subjects	Difficulty Level
Physics	This section was from moderate to difficult.
Chemistry	Consisted of a good balance of easy and tough questions.
Maths	Math questions were tricky, conceptual and depicted the true status of IIT-level questions.
Overall	The exam pattern was tweaked this year to screen IIT aspirants thoroughly. The paper was quite lengthy as well as lot of negative marking was present.

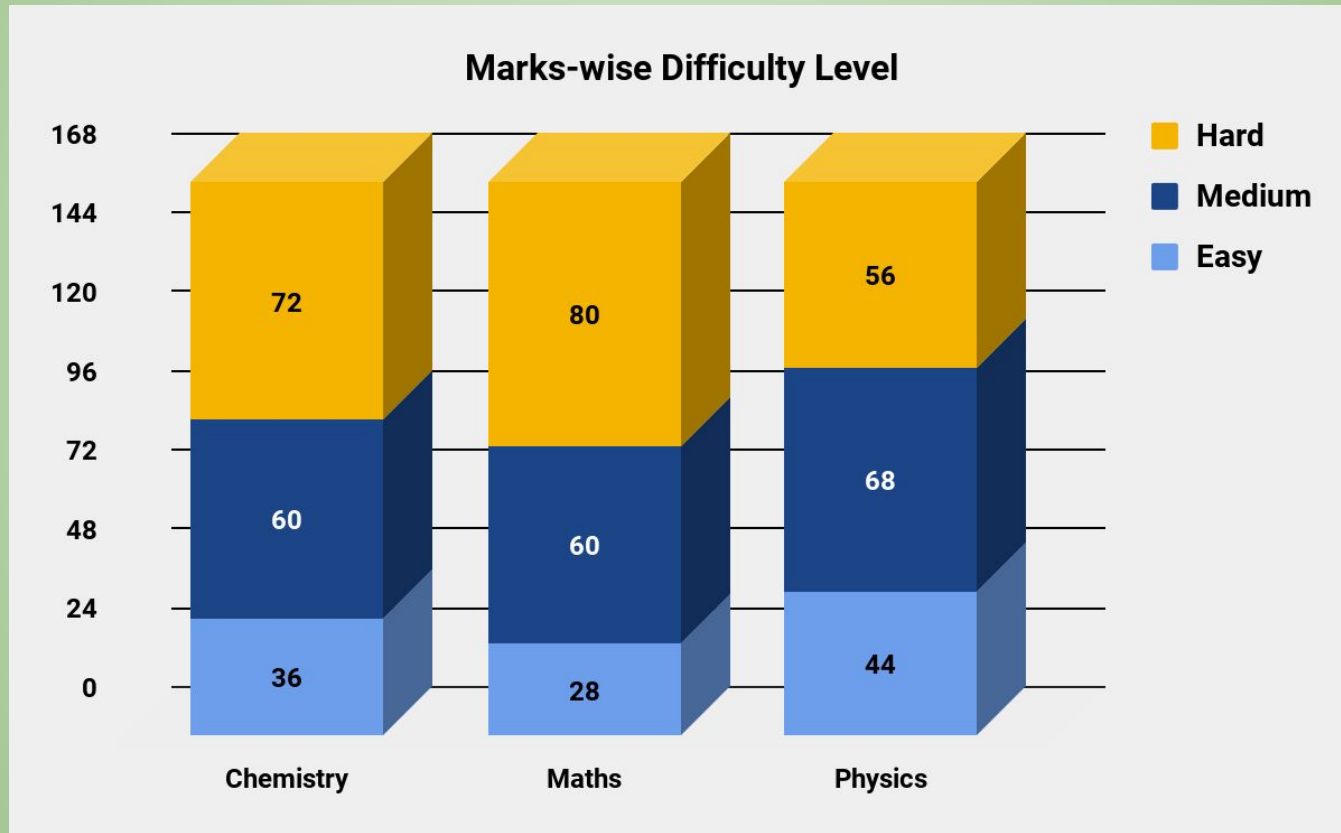
# JEE Advanced 2015 Overall Difficulty Analysis

Subject	Easy		Moderate		Tough	
	No. of Questions	Total Marks	No. of Questions	Total Marks	No. of Questions	Total Marks
Physics	11	44	17	68	12	56
Chemistry	9	36	15	60	16	72
Maths	7	28	15	60	18	80
Grand Total	27	108	47	188	46	208

# JEE Advanced 2015 Question-wise Difficulty Level



# JEE Advanced 2015 Marks-wise Difficulty Level





# JEE Advanced 2015 Paper Analysis: Physics

- The physics questions were from moderate to difficult level.
- The questions were designed to test the math skill of the student rather than testing the conceptual clarity.
- The Physics part was more focused on the Class XII syllabus.
- Questions were asked from almost all chapters with more weightage to Modern Physics, Electrostatics & Magnetism, Ray Optics, Error & Dimensional Analysis.

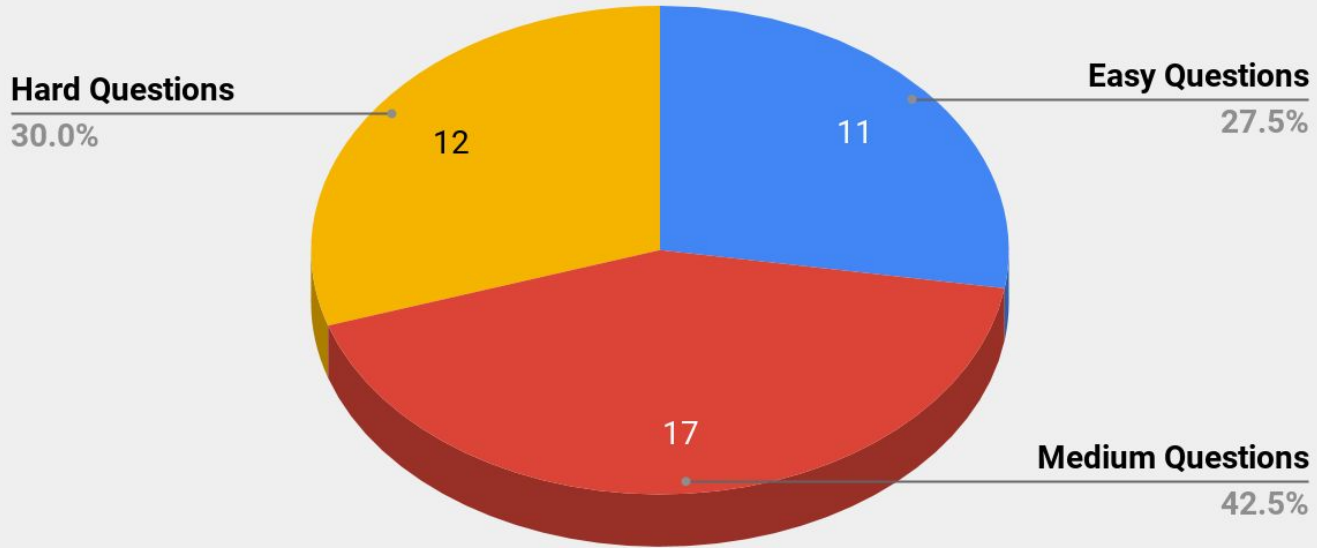
Subject	Class 11		Class 12		Total	
	No. of Questions	Total Marks	No. of Questions	Total Marks	Total Questions	Total Marks
Physics	16	68	24	100	40	168

<b>Topic wise Question Breakup in Physics</b>		
<b>Topics</b>	<b>No of Questions</b>	<b>Weightage of Marks</b>
<b>Electrodynamics</b>	<b>9</b>	<b>21.40%</b>
Capacitance	1	2.40%
Current Electricity	2	4.80%
Electro Magnetic Field	3	7.10%
Electrostatics	3	7.10%
<b>Heat &amp; Thermodynamics</b>	<b>3</b>	<b>7.10%</b>
Heat Transfer	1	2.40%
KTG & Thermodynamics	2	4.80%
<b>Mechanics</b>	<b>13</b>	<b>33.30%</b>
Elasticity & Viscosity	2	4.80%
Error in Measurement	2	4.80%
Fluid Mechanics & Properties of Matter	1	2.40%
Gravitation	2	4.80%

Topic wise Question Breakup in Physics		
Topics	No of Questions	Weightage of Marks
Rigid Body Dynamics	3	7.10%
Unit & Dimension	2	4.80%
Work, Power & Energy	1	4.80%
<b>Modern Physics</b>	<b>7</b>	<b>19.00%</b>
Atomic Physics	2	4.80%
Bohr Model	1	2.40%
Nuclear Physics	3	10%
Photoelectric Effect	1	2.40%
<b>Optics</b>	<b>6</b>	<b>14.30%</b>
Geometrical Optics & Physical Optics	5	11.90%
Wave Optics	1	2.40%
<b>SHM &amp; Waves</b>	<b>2</b>	<b>4.80%</b>
SHM	2	4.80%

# JEE Advanced 2015 Paper Analysis: Physics Section

No of Questions and Difficulty Percentage



# JEE Advanced 2015 Paper Analysis: Chemistry

- Chemistry section in paper I and paper II were on a moderate level.
- Some of the questions seemed to be a bit tricky and needed extra time to solve them.
- Organic and inorganic chemistry were on a medium level but few difficult questions were asked from Physical part.

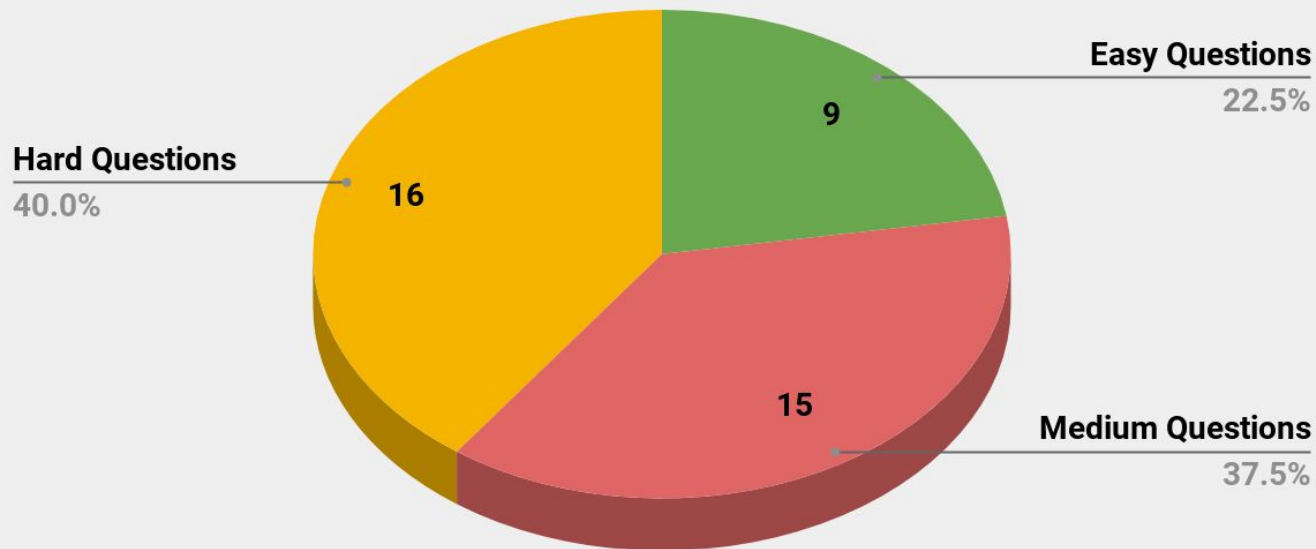
Subject	Class 11		Class 12		Total	
	No. of Questions	Total Marks	No. of Questions	Total Marks	Total Questions	Total Marks
Chemistry	13	56	27	126	40	168

Topic wise Question Breakup in Chemistry		
Topics	No of Questions	Weightage of Marks
<b>Inorganic Chemistry-I</b>	<b>6</b>	<b>14.30%</b>
Chemical Bonding	4	9.50%
p-block	2	4.80%
<b>Inorganic Chemistry-II</b>	<b>9</b>	<b>23.80%</b>
Coordination Compounds	4	9.50%
d-block & f-block Elements	2	4.80%
Metallurgy	2	7.10%
Qualitative Analysis	1	2.40%
<b>Organic Chemistry-I</b>	<b>1</b>	<b>2.40%</b>
General Organic Chemistry- II	1	2.40%
<b>Organic Chemistry-II</b>	<b>13</b>	<b>31.00%</b>
Amine	1	2.40%
Aromatic Compounds	4	9.50%
Biomolecules	1	2.40%
Carbonyl compounds	1	2.40%

Topic wise Question Breakup in Chemistry		
Topics	No of Questions	Weightage of Marks
Grignard Reagent, Reduction, Oxidation & Hydrolysis	1	2.40%
Hydrocarbon (Alkane, Alkene & Alkyne)	3	7.10%
Practical Organic Chemistry	1	2.40%
Stereoisomerism	1	2.40%
<b>Physical Chemistry-I</b>	<b>5</b>	<b>14.30%</b>
Atomic Structure & Nuclear Chemistry	1	2.40%
Chemical Equilibrium	1	2.40%
Ionic Equilibrium	1	2.40%
Thermodynamics and Thermochemistry	2	7.10%
<b>Physical Chemistry-II</b>	<b>6</b>	<b>14.30%</b>
Chemical Kinetics	2	4.80%
Electrochemistry	2	4.80%
Solid State	1	2.40%
Surface Chemistry	1	2.40%

# JEE Advanced 2015 Paper Analysis: Chemistry Section

No of Questions and Difficulty Percentage





# JEE Advanced 2015 Paper Analysis: Maths Section

- Mathematics part in paper I and II consisted of questions from easy to difficult level.
- Some of the questions required longer calculations.
- The Matrix Match type questions included concepts from various areas.
- Some of the major questions were asked from Algebra, Calculus, Vector Algebra, 3-D, Coordinate Geometry.

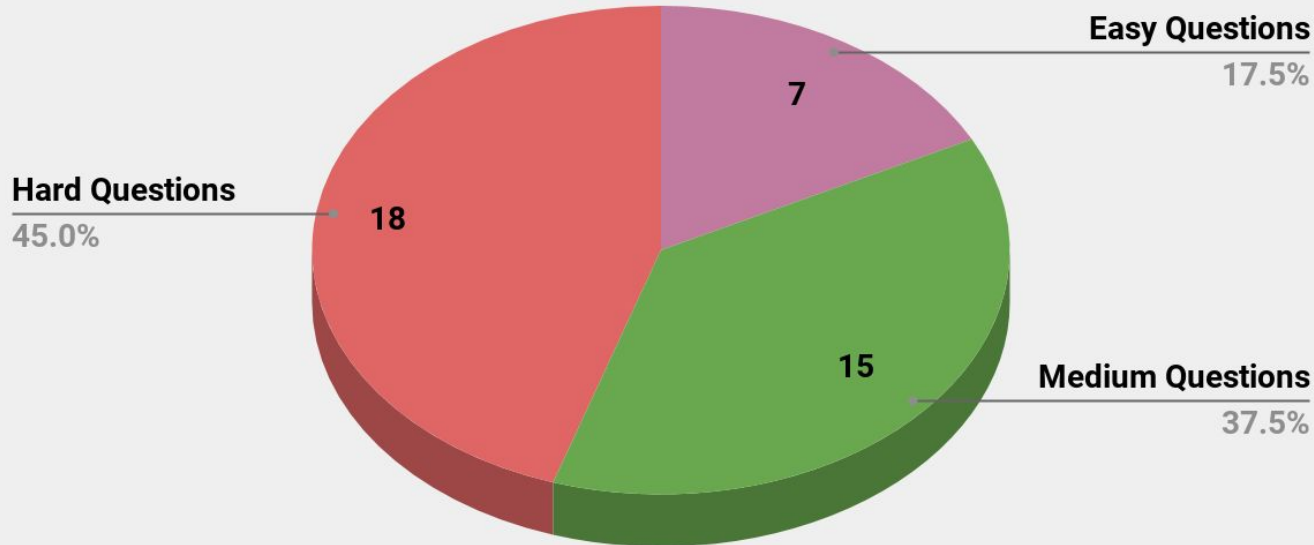
Subject	Class 11		Class 12		Total	
	No. of Questions	Total Marks	No. of Questions	Total Marks	Total Questions	Total Marks
Maths	16	72	24	96	40	168

<b>Topic wise Question Breakup in Maths</b>		
<b>Topics</b>	<b>No of Questions</b>	<b>Weightage of Marks</b>
<b>Algebra</b>	<b>4</b>	<b>9.50%</b>
Vector	4	9.50%
<b>Binomial Theorem</b>	<b>1</b>	<b>2.40%</b>
<b>Complex Numbers</b>	<b>1</b>	<b>2.40%</b>
<b>Coordinate Geometry</b>	<b>6</b>	<b>14%</b>
Ellipse	2	4.80%
Hyperbola	1	2.40%
Parabola	3	7.10%
<b>Differential Calculus</b>	<b>8</b>	<b>19.00%</b>
Application of Derivatives	3	7.10%
Functions	2	4.80%
Limit, Continuity & Differentiability	3	7.10%

<b>Topic wise Question Breakup in Maths</b>		
<b>Topics</b>	<b>No of Questions</b>	<b>Weightage of Marks</b>
<b>Integral Calculus</b>	<b>8</b>	<b>19.00%</b>
Area under curve	1	2.40%
Definite integration	5	11.90%
Differential Equation	2	4.80%
<b>Matrix &amp; Determinants</b>	<b>2</b>	<b>4.80%</b>
<b>Permutation &amp; Combination</b>	<b>1</b>	<b>2.40%</b>
<b>Probability</b>	<b>3</b>	<b>7.10%</b>
<b>Quadratic Equation</b>	<b>1</b>	<b>2.40%</b>
<b>Sequence &amp; Series</b>	<b>2</b>	<b>7.10%</b>
<b>Trigonometry</b>	<b>3</b>	<b>9.50%</b>
Inverse Trigonometric function	1	2.40%
Solution of Triangle	1	4.80%

# JEE Advanced 2015 Paper Analysis: Maths Section

No of Questions and Difficulty Percentage



# Important Topics Asked in JEE Advanced 2015 Paper: Physics

- ❑ Current Electricity
- ❑ Electromagnetic Field
- ❑ Electrostatics
- ❑ KTG & Thermodynamics
- ❑ Elasticity & Viscosity
- ❑ Error in Measurement
- ❑ Gravitation
- ❑ Rigid Body Dynamics
- ❑ Unit & Dimension
- ❑ Atomic Physics
- ❑ Nuclear Physics
- ❑ Photoelectric Effect
- ❑ Geometrical Optics & Physical Optics
- ❑ SHM

# Chemistry

- ❑ Chemical Bonding
- ❑ p-block
- ❑ Coordination Compounds
- ❑ d-block & f-block Elements
- ❑ Metallurgy
- ❑ General Organic Chemistry- II
- ❑ Aromatic Compounds
- ❑ Hydrocarbon (Alkane, Alkene & Alkyne)
- ❑ Stereoisomerism
- ❑ Thermodynamics and Thermochemistry
- ❑ Chemical Kinetics
- ❑ Electro-chemistry
- ❑ Solid State
- ❑ Surface Chemistry

# Maths

- ❑ Vector
- ❑ Binomial Theorem
- ❑ Coordinate Geometry
- ❑ Ellipse
- ❑ Parabola
- ❑ Application of Derivatives
- ❑ Functions
- ❑ Limit, Continuity & Differentiability
- ❑ Definite integration
- ❑ Differential Equation
- ❑ Matrix & Determinants
- ❑ Probability
- ❑ Sequence & Series
- ❑ Trigonometry

# JEE Advanced 2015 Cutoff

<b>Category</b>	<b>Minimum Percentage of Marks in Each Subject</b>	<b>Minimum Percentage of Aggregate Marks</b>
<b>Common rank list (CRL)</b>	<b>10</b>	<b>35</b>
<b>OBC-NCL rank list</b>	<b>9</b>	<b>31.5</b>
<b>SC rank list</b>	<b>5</b>	<b>17.5</b>
<b>ST</b>	<b>5</b>	<b>17.5</b>
<b>Common-PwD rank list (CRL)</b>	<b>5</b>	<b>17.5</b>
<b>OBC-NCL-PwD rank list</b>	<b>5</b>	<b>17.5</b>
<b>SC-PwD rank list</b>	<b>5</b>	<b>17.5</b>
<b>ST-PwD rank list</b>	<b>5</b>	<b>17.5</b>
<b>Preparatory course rank lists</b>	<b>10</b>	<b>35</b>



