

In-Depth Analysis - June 29 JEE Mains B.Tech Shift 1 (9:00 a.m to 12:00 p.m) (Memory-Based)

Disclaimer: Students had to answer only 75 Questions (300 marks) in the exam, But the Analysis below pertains to all the 90 Questions (360 marks)

JEE Mains B.Tech was held in online mode. It had 3 subjects which were divided into 6 sections which were Physics (Section - A & B), Chemistry (Section - A & B) and Mathematics (Section - A & B).

The 6 sections in this examination were divided in the following manner -

Subject	Section	No. of questions asked	No. of questions to be attempted	Total Marks
Physics (MCQ)	A (1)	20	20	80
Physics (Single Answer Type Questions)	B (2)	10	5	40
Chemistry (MCQ)	A (3)	20	20	80
Chemistry (Single Answer Type Questions)	B (4)	10	5	40
Mathematics (MCQ)	A (5)	20	20	80
Mathematics (Single Answer Type Questions)	B (6)	10	5	40
Total	6	90	75	360

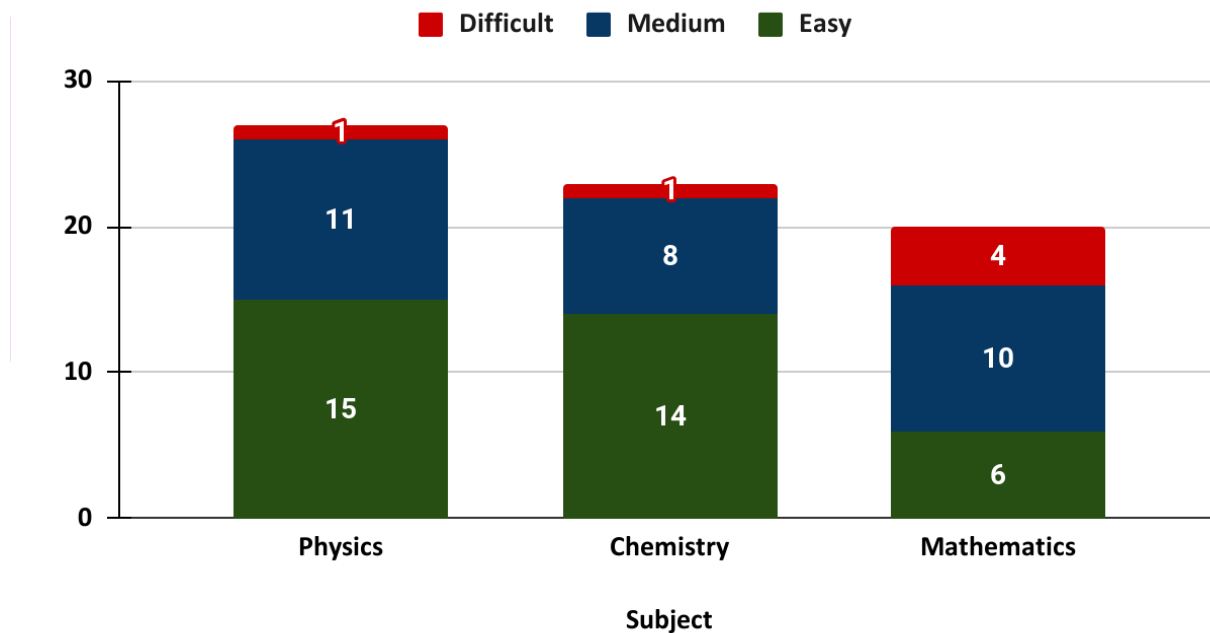
- Section A (1), A (3) & A (5) were MCQ (Multiple Choice Questions), each question had 4 marks, students will be awarded 4 marks for the correct answer and -1 mark will be awarded for the incorrect answer.
- Section B (2), B (4) & B (6) were single answer type questions, each question had 4 marks students will be awarded 4 marks for the correct answer and 0 marks will be awarded for the incorrect answer.

Subject Wise Analysis

Although it is the analysis of memory-based questions, our experts figured out **70** questions out of 90 questions i.e. **27** questions in Physics, **23** questions in Chemistry and **20** questions in Mathematics.

Subject	Easy		Medium		Difficult		Grand Total	
	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks	No of Questions	Total Marks
Physics	15	60	11	44	1	4	27	108
Chemistry	14	56	8	32	1	4	23	92
Mathematics	6	24	10	40	4	16	20	80
Grand Total	35	140	29	116	6	24	70	280

Subject Wise Difficulty Level



- Most of the Physics questions were either easy or of moderate difficulty.
- Most of the questions from Chemistry were either easy or of moderate difficulty & few were difficult.
- Most of the questions from Mathematics were easy to moderate level & quite few were difficult.

Physics (Section 1 & 2)

Physics was easier than Chemistry & Maths. Physics had 15 easy questions and 11 medium-type questions. Following is the question distribution table as per Class, Chapter, Topic & Difficulty -

Class	Subject	Question No	Chapter Name	Topic Name	Difficulty Level
12th	Physics	1	Wave Optics	Young's Double Slit Experiment (Alternate Method)	Medium
11th	Physics	2	Laws of Motion	Conservation of Momentum	Medium
12th	Physics	3	Current Electricity	Combination of Resistors – Series and Parallel	Easy
11th	Physics	4	Motion In A Straight Line	Motion under gravity	Medium
12th	Physics	5	Dual Nature of Radiation and Matter	Photoelectric Effect and Wave Theory of Light	Easy
11th	Physics	6	Gravitation	Escape Speed	Medium
11th	Physics	7	Oscillations	Simple Harmonic Motion	Medium
12th	Physics	8	Electromagnetic Waves	Intensity of Electromagnetic Wave	Easy
11th	Physics	9	Motion In A Plane	Addition of Vectors	Easy
11th	Physics	10	System of Particles and Rotational Motion	Angular Momentum	Easy
11th	Physics	11	Laws of Motion	Conservation of Momentum	Easy
11th	Physics	12	Work, Energy and Power	Work Done By A Variable Force	Medium
11th	Physics	13	Thermal Properties of Matter	Heat Transfer	Medium
12th	Physics	14	Current Electricity	Electrical Energy, Power	Medium
12th	Physics	15	Alternating Current	Ac Voltage Applied To A Series Lcr Circuit	Easy
12th	Physics	16	Moving Charges and Magnetism	The Cyclotron	Easy
12th	Physics	17	Electrostatic Potential and Capacitance	Energy stored in Capacitors	Easy
11th	Physics	18	Mechanical Properties of Solids	Elastic Moduli	Easy
12th	Physics	21	Electric Charges and Fields	Motion of A Charged Particle In Uniform Electric Field	Medium
12th	Physics	22	Communication Systems	Band Width of Signals	Easy
12th	Physics	23	Ray Optics and Optical Instruments	Spherical Refracting Surfaces	Difficult

12th	Physics	25	Semiconductor Electronics : Materials, Devices and Simple Circuits	Junction Transistor	Medium
11th	Physics	26	Units and Measurements	Dimensional Analysis and Its Applications	Easy
11th	Physics	27	Waves	The Speed of A Travelling Wave	Easy
12th	Physics	28	Current Electricity	Ohm's Law	Medium
12th	Physics	29	Magnetism and Matter	Earth's Magnetism	Easy
11th	Physics	30	Thermodynamics	Heat Engines	Easy

Chemistry (Section 3 & 4)

Chemistry had moderate to the difficult level of questions. Chemistry had 8 medium and 14 easy questions & 1 was difficult. Following is the question distribution table as per Class, Chapter, Topic & Difficulty -

Class	Subject	Question No	Chapter Name	Topic Name	Difficulty Level
12th	Chemistry	32	Haloalkanes and Haloarenes	Optical Isomerism	Easy
12th	Chemistry	33	General Principles and Processes of Isolation of Elements	Construction of ore	Easy
12th	Chemistry	34	Biomolecules	Amino Acid	Easy
12th	Chemistry	35	The D and F-Block Elements	Electronic Configurations of The D-Block Elements	Easy
11th	Chemistry	36	Structure of Atom	Towards Quantum Mechanical Model of The Atom	Easy
12th	Chemistry	37	Amines	Chemical Reaction	Easy
12th	Chemistry	38	Biomolecules	Nucleic Acid	Easy
12th	Chemistry	39	Alcohols, Phenols and Ethers	Phenols	Medium
11th	Chemistry	40	Environmental Chemistry	Atmospheric Pollution	Easy
12th	Chemistry	41	Polymers	Classification of Polymers	Easy
11th	Chemistry	42	States of Matter	Equation of State For Real Gases (Van Der Waals Equation)	Medium
11th	Chemistry	43	Equilibrium	Solubility Equilibria of Sparingly Soluble Salts	Medium

11th	Chemistry	44	Structure of Atom	Quantum Mechanical Model of The Atom	Medium
11th	Chemistry	45	The P-Block Elements	Boron Family	Easy
12th	Chemistry	46	The D and F-Block Elements	Disproportionation reaction	Medium
12th	Chemistry	47	The P-Block Elements	Reaction of Phosphorous	Medium
11th	Chemistry	48	The S-Block Elements	Flame test	Easy
12th	Chemistry	51	Alcohols, Phenols and Ethers	Chemical reaction of alcohol	Medium
11th	Chemistry	52	Some Basic Concepts of Chemistry	Stoichiometry and Stoichiometric Calculations	Difficult
12th	Chemistry	53	Chemical Kinetics and Nuclear Chemistry	Rates of Chemical Reaction	Medium
12th	Chemistry	54	The Solid State	Radius Ratio In Ionic Solids	Easy
11th	Chemistry	55	States of Matter	Ideal Gas Equation	Easy

Mathematics (Section 5 & 6)

Mathematics was of moderate difficulty. Mathematics had 6 easy questions, 10 medium questions and 4 difficult questions. Following is the question distribution as per Class, Chapter, Topic & Difficulty -

Class	Subject	Question No	Chapter Name	Topic Name	Difficulty Level
11th	Mathematics	61	Complex Number	Modules	Difficult
12th	Mathematics	62	Three Dimensional Geometry	Plane	Easy
12th	Mathematics	63	Application of Derivatives	Maxima and Minima	Difficult
12th	Mathematics	64	Vector Algebra	Dot Product	Easy
12th	Mathematics	65	Inverse Trigonometric Functions	Domain	Medium
12th	Mathematics	66	Matrices	Multiplication	Medium
11th	Mathematics	67	Sequences and Series	Sequences	Difficult

12th	Mathematics	68	Application of Integrals	Area under the curve	Easy
11th	Mathematics	69	Mathematical Reasoning		Easy
12th	Mathematics	70	Probability	Probability	Medium
11th	Mathematics	71	Conic Sections	St. Line	Medium
12th	Mathematics	81	Differential Equations	Homogenous equation	Medium
12th	Mathematics	82	Integrals	Definite Integral	Easy
11th	Mathematics	83	Trigonometric Functions	Graph	Easy
11th	Mathematics	84	Conic Sections	Circle	Difficult
11th	Mathematics	85	Complex Number and Quadratic Equations	Modulus	Medium
11th	Mathematics	87	Binomial Theorem	Multinomial Theorem	Medium
11th	Mathematics	88	Conic Sections	Parabola	Medium
11th	Mathematics	89	Statistics	Variance and Standard Deviation	Medium
11th	Mathematics	90	Conic Sections	Ellipse	Medium

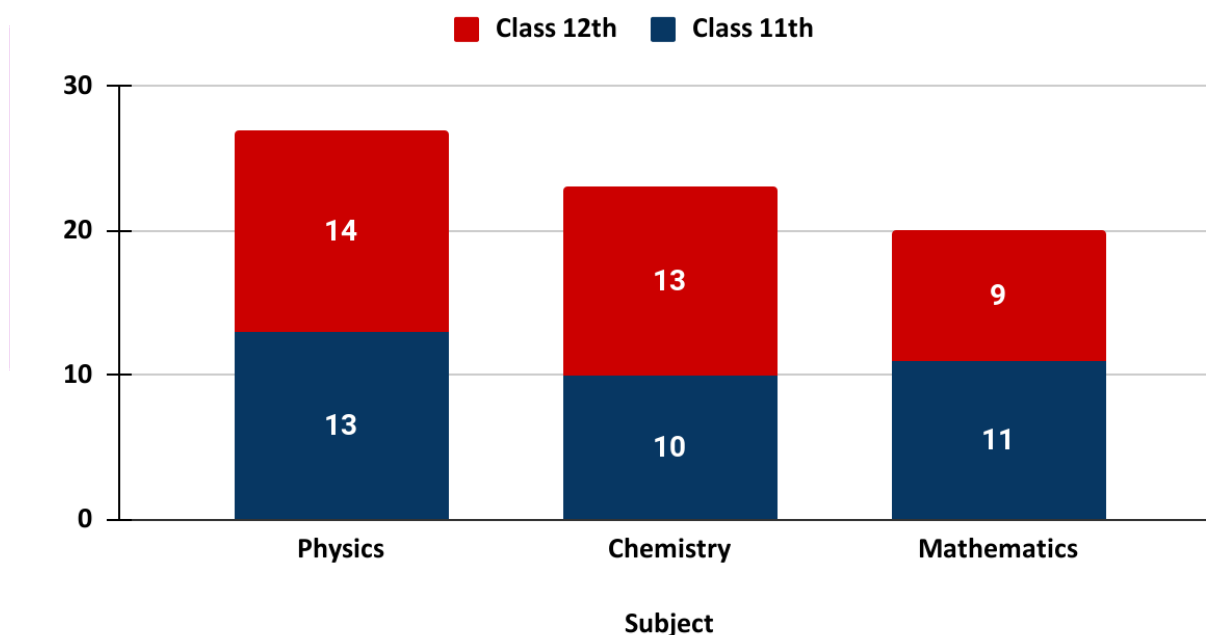
Note - As this is a memory-based analysis of the question paper, our experts could figure out **70 out of 90** questions from the total paper.

Class Wise Question Distribution

As per our expert faculties, the questions from the Class 12th syllabus & the Class 11th syllabus had an approximately identical proportion. Below is the Class wise question distribution table -

Subject	11th		12th		Total Percentage	
	No. of Questions	Total Marks	No of Questions	Total Marks	Class 11	Class 12
Physics	13	52	14	56	43%	47%
Chemistry	10	40	13	52	33%	43%
Mathematics	11	44	9	36	37%	30%
Grand Total	34	136	36	144	38%	40%

Class Wise Question Distribution



Overall Difficulty Level Analysis

In this analysis, we have rated every question on a scale of 1 to 3. The ratings are done by our expert faculty. The individual ratings are then averaged to calculate the overall difficulty level.

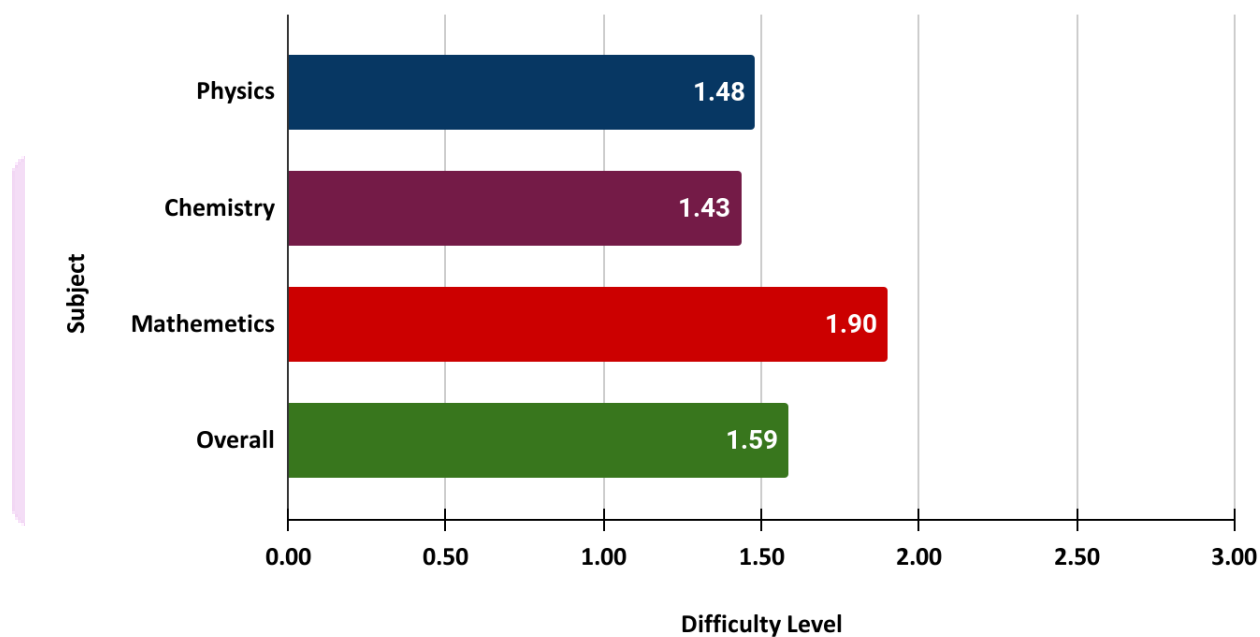
Easy - 1

Medium - 2

Difficult - 3

Subject	Difficulty Level
Physics	1.48
Chemistry	1.43
Mathematics	1.90
Overall	1.59

Overall Difficulty Level - JEE Mains 2022



As per our expert faculties, this year's June 29, JEE Main B.Tech Shift 1 paper was quite easy except for the Mathematics Section which was moderately difficult & time-consuming.