

In-Depth Analysis - June 29 JEE Mains B.Tech Shift 2 (3:00 p.m to 6:00 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

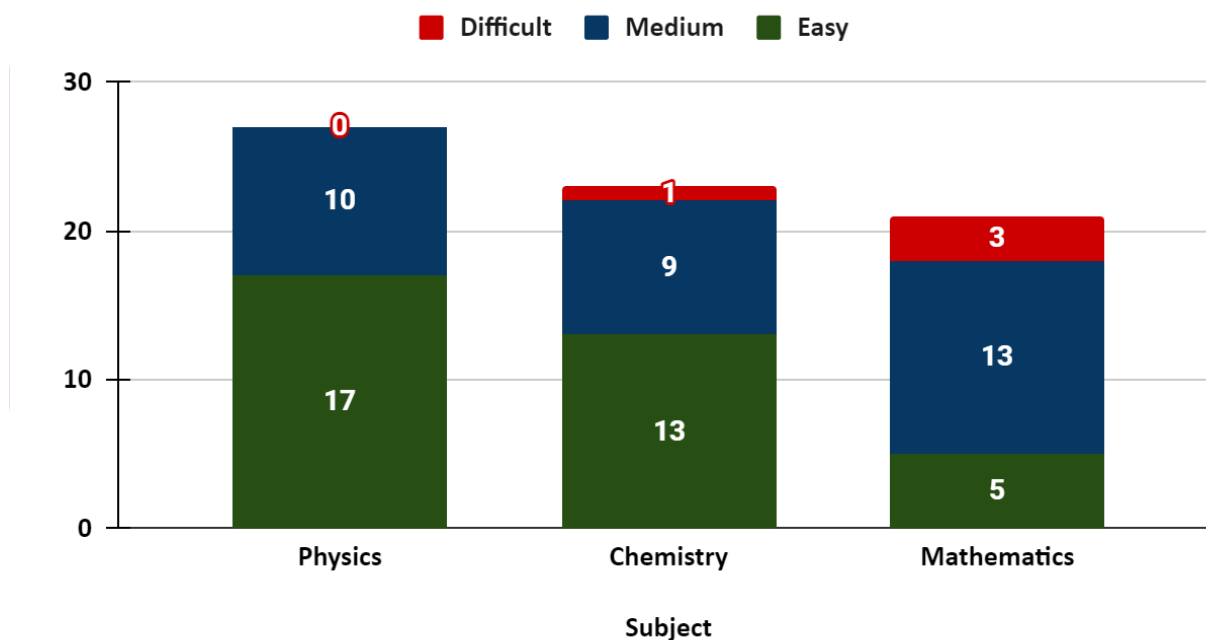
- Section A (1), A (3) & A (5) were MCQ (Multiple Choice Questions), each question had 4 marks, students will be awarded 4 marks for the correct answer and -1 mark will be awarded for the incorrect answer.
- Section B (2), B (4) & B (6) were single answer type questions, each question had 4 marks students 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 **71** questions out of 90 questions i.e. **27** questions in Physics, **23** questions in Chemistry and **21** 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	17	68	10	40	0	0	27	108
Chemistry	13	52	9	36	1	4	23	92
Mathematics	5	20	13	52	3	12	21	84
Grand Total	35	140	32	128	4	16	71	284

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 a few were difficult.

Physics (Section 1 & 2)

Physics was easier than Chemistry & Maths. Physics had 17 easy questions and 10 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
11th	Physics	1	Laws of Motion	Newtons Second Law of Motion	Easy
11th	Physics	2	Motion In A Plane	Projectile Motion	Easy
11th	Physics	3	Motion In A Straight Line	Acceleration	Easy
11th	Physics	4	Work, Energy and Power	Gravitational Potential Energy	Easy
12th	Physics	5	Communication Systems	Propagation of Electromagnetic Waves	Easy
12th	Physics	6	Moving Charges and Magnetism	Magnetic Force On A Current Carrying Conductor	Easy
12th	Physics	7	Ray Optics and Optical Instruments	Total Internal Reflection	Easy
12th	Physics	8	Current Electricity	Combination of Resistors – Series and Parallel	Medium
11th	Physics	9	Thermodynamics	Calculating Work Done By A Gas	Easy
12th	Physics	10	Electric Charges and Fields	Electric Field	Easy
11th	Physics	11	Units and Measurements	Significant Figures	Easy
11th	Physics	12	Oscillations	Some Systems Executing Simple Harmonic Motion	Medium
12th	Physics	13	Current Electricity	Cells In Series and Parallel	Medium
12th	Physics	14	Current Electricity	Rc Circuits	Medium
12th	Physics	15	Nuclei	Law of Radioactive Decay	Medium
11th	Physics	16	Laws of Motion	Newtons Second Law of Motion	Easy
12th	Physics	17	Dual Nature of Radiation and Matter	Photoelectric Effect	Easy
12th	Physics	18	Nuclei	Law of Radioactive Decay	Easy
12th	Physics	19	Electrostatic Potential and Capacitance	Rc Circuits	Medium
11th	Physics	20	Units and Measurements	Instruments(vernier callipers)	Medium
12th	Physics	21	Electric Charges and Fields	Electric Field	Easy
11th	Physics	22	System of Particles and Rotational Motion	Theorems of Perpendicular and Parallel Axes	Medium
11th	Physics	23	Gravitation	Kepler's Laws of Planetary Motion (Motion of Planets Around Sun)	Medium
11th	Physics	24	Units and Measurements	Dimensional Analysis and Its Applications	Easy

11th	Physics	25	Waves	Resonance tube (Standing wave)	Medium
12th	Physics	29	Electrostatic Potential and Capacitance	Relation Between Electric Field and Potential	Easy
12th	Physics	30	Wave Optics	Young's Double Slit Experiment (Alternate Method)	Easy

Chemistry (Section 3 & 4)

Chemistry had moderate to the difficult level of questions. Chemistry had 9 medium and 13 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	31	Coordination Compounds	Magnetic properties	Easy
11th	Chemistry	32	The S-Block Elements	Compounds of Sodium and Potassium	Easy
11th	Chemistry	33	Some Basic Concepts of Chemistry	Mole Concept and Molar Masses	Medium
11th	Chemistry	34	Environmental Chemistry	Soil Pollution	Easy
11th	Chemistry	35	Chemical Bonding and Molecular Structure	The Valence Shell Electron Pair Repulsion (Vsepr) Theory	Easy
12th	Chemistry	36	Amines	Chemical Reaction Amine	Easy
12th	Chemistry	37	Chemistry In Everyday Life	Antimicrobials	Easy
12th	Chemistry	38	Polymers	Classification of Polymerisation Reaction	Easy
11th	Chemistry	39	Environmental Chemistry	Atmospheric Pollution	Easy
11th	Chemistry	40	Thermodynamics	Pressure-Volume Work	Difficult
11th	Chemistry	41	Chemical Bonding and Molecular Structure	Molecular Orbital Theory (Mot)	Easy
11th	Chemistry	42	Hydrocarbons	Aromatic Hydrocarbon	Medium
11th	Chemistry	43	Organic Chemistry Some Basic Principles and Techniques	Intermediate	Medium
11th	Chemistry	44	Structure of Atom	Quantum Mechanical Model of The Atom	Medium
12th	Chemistry	45	General Principles and Processes of Isolation of Elements	Extractive Metallurgy	Easy

11th	Chemistry	46	Classification of Elements and Periodicity In Properties	Ionization energy	Easy
12th	Chemistry	47	Chemical Kinetics and Nuclear Chemistry	Activation Energy	Medium
12th	Chemistry	48	Biomolecules	Proteins	Easy
11th	Chemistry	51	Organic Chemistry Some Basic Principles and Techniques	Strereo Isomer	Medium
12th	Chemistry	52	Aldehydes, Ketones and Carboxylic Acids	Aldol condensation	Medium
12th	Chemistry	53	Alcohols, Phenols and Ethers	Chemical Properties	Medium
11th	Chemistry	54	States of Matter	The Gas Laws	Easy
12th	Chemistry	55	Solutions	Colligative Properties	Medium

Mathematics (Section 5 & 6)

Mathematics was of moderate difficulty. Mathematics had 5 easy questions, 13 medium questions and 3 difficult questions. Following is the question distribution as per Class, Chapter, Topic & Difficulty -

Class	Subject	Question No	Chapter Name	Topic Name	Difficulty Level
12th	Mathematics	61	Limits and Derivatives	Limits	Medium
12th	Mathematics	62	Three Dimensional Geometry	Lines & Plane	Easy
11th	Mathematics	63	Sequences and Series	Arithmetic Progression (A.P.)	Difficult
11th	Mathematics	64	Sequences and Series	Arithmetic -Geometric Series (AGP)	Medium
11th	Mathematics	65	Conic Sections	Circle	Easy
12th	Mathematics	66	Integrals	Definite Integral	Medium
12th	Mathematics	67	Probability	Probability of P& C	Medium
11th	Mathematics	68	Trigonometric Functions	Heights and Distances	Medium
12th	Mathematics	69	Application of Integrals	Area Under Curves	Medium
11th	Mathematics	70	Definite Integral	Properties of Definite Integral	Easy
11th	Mathematics	71	Conic Sections	Parabola	Difficult
11th	Mathematics	72	Straight Lines	Orthocentre	Medium
12th	Mathematics	73	Differential Equations	Variable separable Differential Equations	Medium
11th	Mathematics	81	Trigonometric Functions	Trigonometric Solutions	Medium
11th	Mathematics	82	Binomial Theorem	General Terms	Medium
11th	Mathematics	83	Complex Number	Argument	Medium

11th	Mathematics	84	Permutations and Combinations	Combinations	Medium
12th	Mathematics	85	Matrices	Adjoint	Difficult
11th	Mathematics	86	Conic Sections	Circle	Easy
12th	Mathematics	87	Matrices	Algebra of matrices	Medium
11th	Mathematics	88	Complex Number	Cube Roots of Unity	Easy

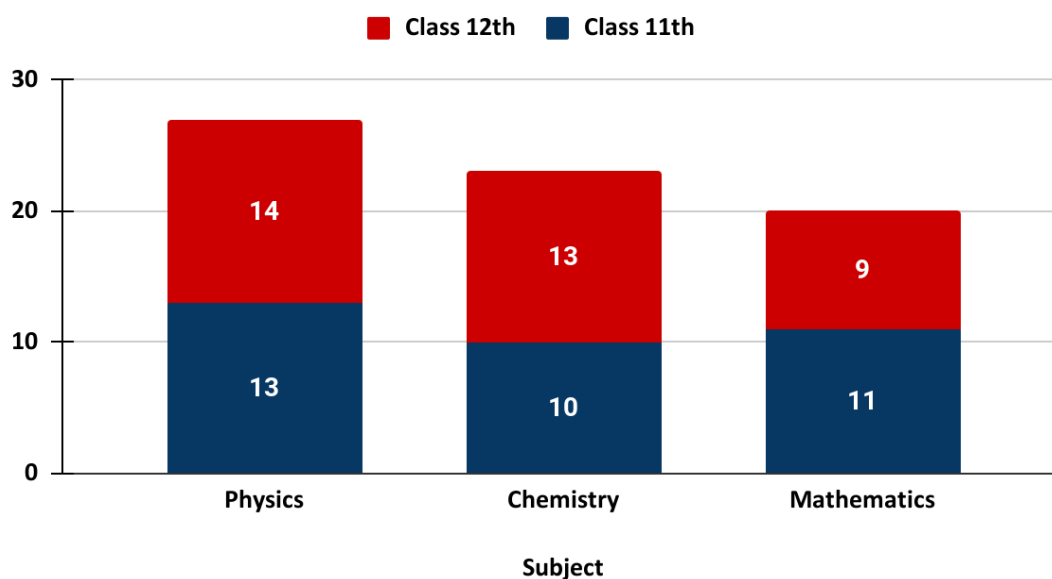
Note - As this is a memory-based analysis of the question paper, our experts could figure out **70 out of 90** questions from the total paper.

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.

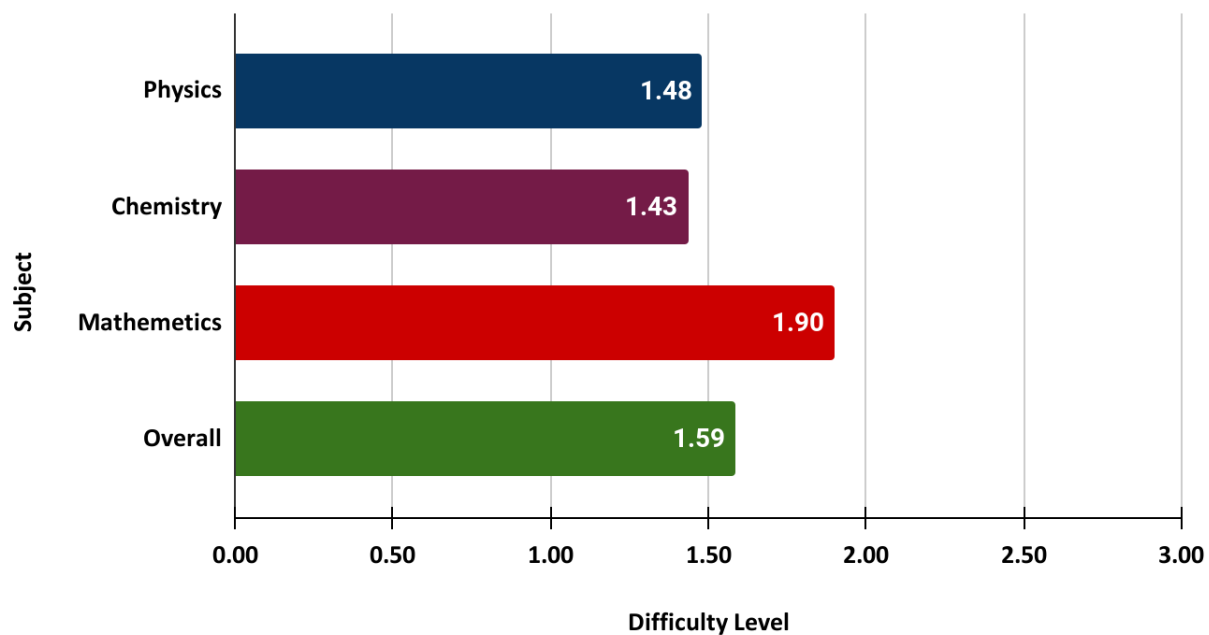
Easy - 1

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 2** paper was quite easy except for the Mathematics Section which was moderately difficult & time-consuming.