

In-Depth Analysis - June 27 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

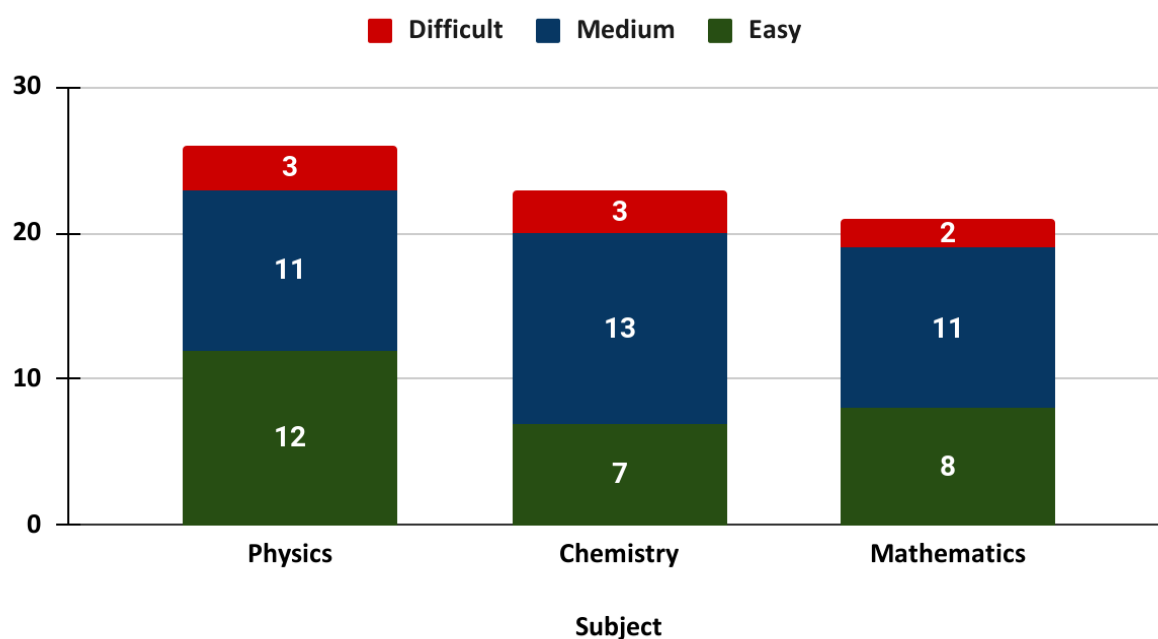
- Section A (1), A (3) & A (5) were MCQ (Multiple Choice Questions), each question had 4 marks, students will be awarded 4 marks for the correct answer and -1 mark will be awarded for the incorrect answer.
- Section B (2), B (4) & B (6) were single answer type questions, each question had 4 marks students 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, **26** questions in Physics, **23** questions in Chemistry and **21** 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	12	48	11	44	3	12	26	104
Chemistry	7	28	13	52	3	12	23	92
Mathematics	8	32	11	44	2	8	21	84
Grand Total	27	108	35	140	8	32	70	280

Subject Wise Difficulty Level



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

Physics (Section 1 & 2)

Physics was easy compared to Chemistry & Maths. Physics had 12 easy questions and 11 medium type questions & 3 questions were difficult. Following is the question distribution table as per Class, Chapter, Topic & Difficulty -

Question No	Class	Chapter Name	Topic Name	Difficulty Level
1	11th	Laws of Motion	Friction	Difficult
2	12th	Electromagnetic Waves	Important Characteristics and Nature of Electromagnetic Waves	Easy
3	11th	Units and Measurements	Accuracy, Precision of Instruments and Errors In Measurement	Medium
4	11th	System of Particles and Rotational Motion	Centre of Mass	Easy
5	12th	Current Electricity	Potentiometer	Medium
6	11th	Motion In A Plane	Projectile Motion	Medium
7	11th	Motion In A Plane	Rain and Man problem	Easy
8	12th	Electrostatic Potential and Capacitance	Sharing of Charge and Common Potential	Easy
9	12th	Dual Nature of Radiation and Matter	Wave Nature of Matter	Medium
10	12th	Semiconductor Electronics : Materials, Devices and Simple Circuits	Digital Electronics and Logic Gates	Easy
11	11th	Work, Energy and Power	Motion In A Vertical Circle	Difficult
12	12th	Work, Energy and Power	Collisions	Difficult
13	12th	Ray Optics and Optical Instruments	Refraction	Medium
14	11th	Gravitation	Universal Law of Gravitation	Easy
15	11th	Units and Measurements	Dimensional Analysis and Its Applications	Easy
16	12th	Wave Optics	Young's Double Slit Experiment (Alternate Method)	Medium
17	11th	Oscillations	Simple Harmonic Motion	Easy
18	11th	Waves	Doppler Effect	Medium
19	12th	Magnetism and Matter	Magnetic Properties of Materials	Easy
20	11th	Thermodynamics	Heat Engines	Medium
21	12th	Alternating Current	A.C. Voltage Applied To A Resistor	Easy
22	12th	Moving Charges and Magnetism	The Moving Coil Galvanometer	Medium
23	12th	Atoms	Bohr's Atomic Model	Medium
24	11th	Mechanical Properties of Fluids	Viscosity	Medium
25	12th	Communication Systems	Propagation of Electromagnetic Waves	Easy
26	12th	Electrostatic Potential and Capacitance	Parallel plate capacitor	Easy

Chemistry (Section 3 & 4)

Chemistry had moderate to difficult level of questions. Chemistry had 13 medium and 7 easy questions & 3 questions were difficult. Following is the question distribution table as per Class, Chapter, Topic & Difficulty -

Question No	Class	Chapter Name	Topic Name	Difficulty Level
31	12th	The P-Block Elements	Group 15 Elements	Medium
32	11th	Chemical Bonding and Molecular Structure	Hybridization	Medium
33	12th	Coordination Compounds	Bonding In Coordination Compounds	Medium
34	12th	The P-Block Elements	Preparation of BeH_2	Easy
35	11th	Classification of Elements and Periodicity In Properties	Ionic Size	Easy
36	11th	Environmental Chemistry	Photochemical Smog	Medium
37	12th	Haloalkanes and Haloarenes	Reduction of Haloalkanes	Difficult
38	12th	General Principles and Processes of Isolation of Elements		Difficult
39	11th	Hydrogen	Hydrogen Peroxide (H_2O_2)	Easy
40	12th	Surface Chemistry	Colloids	Easy
41	12th	Polymers	Use of Polymers	Easy
42	11th	Organic Chemistry Some Basic Principles and Techniques	Qualitative Analysis of Organic Compounds	Easy
43	12th	Hydrocarbons	Alkenes	Medium
44	12th	Aldehydes, Ketones and Carboxylic Acids	Oxydation	Difficult
45	12th	Amines	Hoffman Bromide Degradation	Medium
46	12th	Chemistry In Everyday Life	Cleansing Agents	Medium
47	11th	Structure of Atom	BohrS Model For Hydrogen Atom	Medium
48	12th	The Solid State	Diffect in Solid	Medium
49	11th	Organic Chemistry Some Basic Principles and Techniques	Isomerism	Medium
50	12th	The D and F-Block Elements	Magnetic Moment	Medium
51	12th	Electrochemistry	Molar Conductivity	Easy
52	11th	Equilibrium	Applications of Equilibrium Constant	Medium
53	11th	Structure of Atom	BohrS Model For Hydrogen Atom	Medium

Mathematics (Section 5 & 6)

Mathematics was easy to moderate difficulty. Mathematics had 8 easy questions, 11 medium questions and 2 difficult questions. Following is the question distribution as per Class, Chapter, Topic & Difficulty -

Question No	Class	Chapter Name	Topic Name	Difficulty Level
61	12th	Integrals	Definite Integral	Easy
62	11th	Trigonometric Functions	Angle	Easy
63	12th	Vector Algebra	Cross Product	Medium
64	11th	Quadratic Equations	Number of Solution	Easy
65	12th	Probability	Binomial Distribution	Medium
66	11th	Sequences and Series	Geometric Progression (G.P.)	Easy
67	12th	Probability	Permutations and Combinations	Medium
68	11th	Conic Sections	St. Line	Difficult
69	12th	Limits and Derivatives	Algebraic Limit	Medium
70	12th	Differential Equations	Solution	Medium
71	11th	Complex Number	Nth Roots of Unity	Difficult
72	11th	Conic Sections	Ellipse	Easy
73	11th	Mathematical Reasoning	Mathematical Reasoning	Easy
74	11th	Sequences and Series	Telescopic Sums and Products	Medium
75	11th	Quadratic Equations	Roots	Easy
76	11th	Permutations and Combinations		Medium
77	12th	Integrals	Indefinite Integral	Medium
78	12th	Introduction To Three Dimensional Geometry	Direction Ratios	Medium
79	12th	Relations and Functions	Functions	Medium
80	12th	Inverse Trigonometric Functions	Principal Value and General Value	Easy
81	12th	Application of Derivatives	Maxima and Minima	Medium

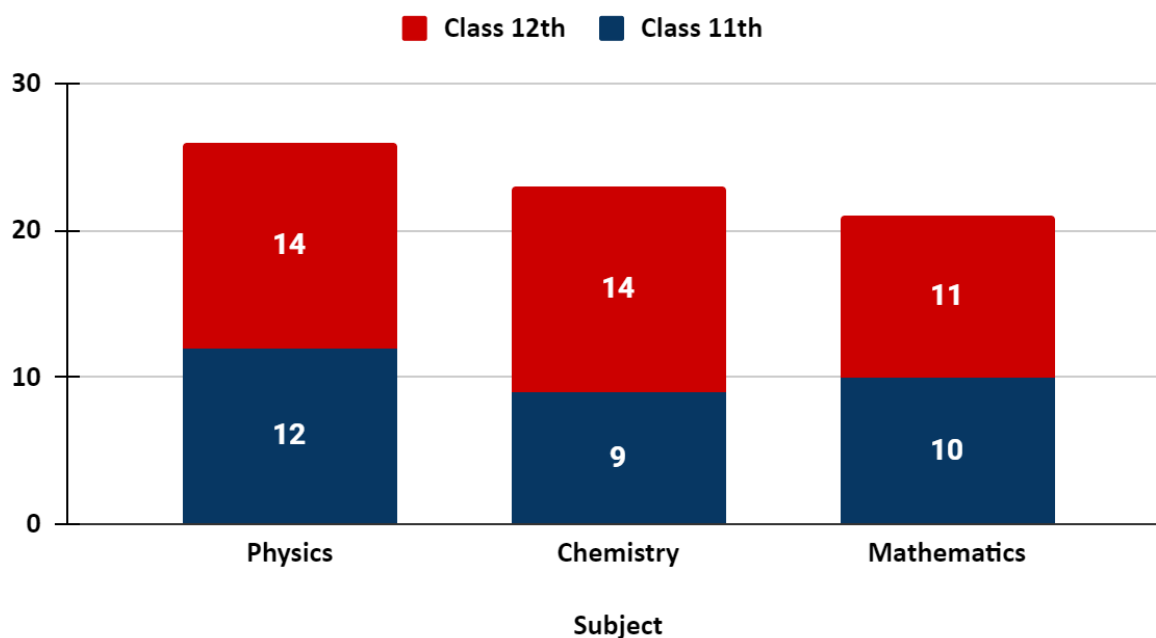
Note - As this is a memory-based analysis of the question paper, our experts could figure out 70 out of 90 questions from the total paper.

Class Wise Question Distribution

As per our expert faculties, the questions from Class 12th syllabus dominated Class 11th syllabus. 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	12	48	14	56	40%	47%
Chemistry	9	36	14	56	30%	47%
Mathematics	10	40	11	44	33%	37%
Grand Total	31	124	39	156	34%	43%

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.

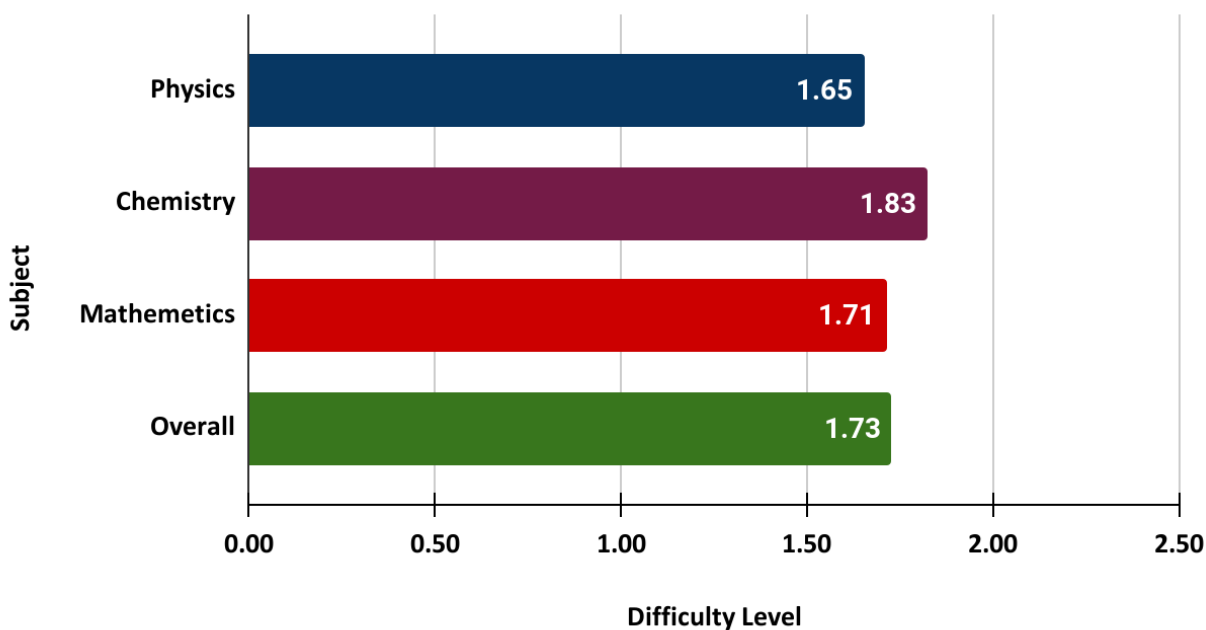
Easy - 1

Medium - 2

Difficult - 3

Subject	Difficulty Level
Physics	1.65
Chemistry	1.83
Mathematics	1.71
Overall	1.73

Overall Difficulty Level - 2022 B.Tech JEE Mains



As per our expert faculties, this year's June 27, JEE Main B.Tech Shift 1 paper was moderately difficult.