

In-Depth Analysis - JEE Mains B.Tech Shift 2 (3:00 p.m to 06:00 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

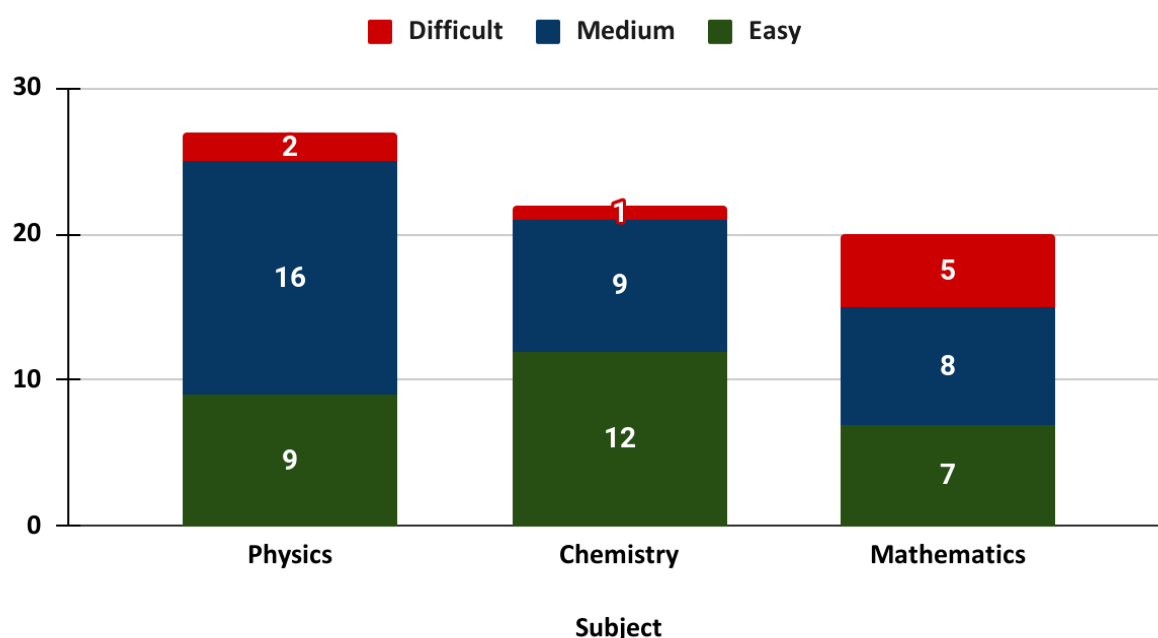
- Section A (1), A (3) & A (5) was MCQ (Multiple Choice Questions), each question had 4 marks, students will be awarded 4 marks for the correct answer and -1 mark will be awarded for the incorrect answer.
- Section B (2), B (4) & B (6) was a single answer type questions, each question had 4 marks students 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 69 questions out of 90 questions i.e. **27** questions in Physics, **22** questions in Chemistry and **20** 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	9	36	16	64	2	8	27	108
Chemistry	12	48	9	36	1	4	22	88
Mathematics	7	28	8	32	5	20	20	80
Grand Total	28	112	33	132	8	32	69	276

Subject Wise Difficulty Level



- Most of the questions from the Physics were either easy or of moderate difficulty.
- Most of the questions from Chemistry were easy to moderate .
- Mathematics was approximately an equal mix of easy, moderate and difficult questions

Physics (Section 1 & 2)

Physics was easy compared to Chemistry & Maths. Physics had 9 easy questions and 16 medium type questions & Just 2 questions were of the difficult category. Following is the question distribution table as per Class, Chapter, Topic & Difficulty -

Class	Question No	Chapter Name	Topic Name	Difficulty Level
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12th	1	Moving Charges and Magnetism	Motion of A Charged Particle In A Magnetic Field	Medium
11th	2	Waves	Standing Or Stationary Waves	Easy
11th	3	Motion In A Straight Line	Kinematical Quantities On Graphs	Medium
11th	4	Thermodynamics	Carnot Engine	Medium
11th	5	Gravitation	Kepler's Laws of Planetary Motion (Motion of Planets Around Sun)	Easy
11th	6	Work, Energy and Power	Motion In A Vertical Circle	Easy
12th	7	Electrostatic Potential and Capacitance	Energy stored in a capacitor	Medium
11th	8	Motion In A Plane	Projectile Motion	Medium
12th	9	Semiconductor Electronics : Materials, Devices and Simple Circuits	Special Purpose P-N Junction Diodes	Medium
11th	10	Thermodynamics	Specific Heat Capacity	Difficult
12th	11	Electromagnetic Waves	Displacement Current	Medium
12th	12	Wave Optics	Superposition of The Waves	Easy
12th	13	Electric Charges and Fields	Application of Gauss's Law	Medium
12th	14	Electric Charges and Fields	Forces Between Multiple Charges	Easy
11th	15	Work, Energy and Power	The Concept of Potential Energy	Medium
12th	16	Current Electricity	Combination of Resistors – Series and Parallel	Easy
11th	17	Thermal Properties of Matter	Specific Heat Capacity	Medium
12th	18	Current Electricity	Electrical Energy, Power	Medium
11th	19	Oscillations	Velocity and Acceleration In Simple Harmonic Motion	Easy
12th	20	Alternating Current	Ac Voltage Applied To A Series Lcr Circuit	Medium
11th	21	Motion In A Plane	Uniform Circular Motion	Medium
12th	22	Electromagnetic Induction	Motional Electromotive Force	Medium
12th	23	Nuclei	Law of Radioactive Decay	Difficult
12th	24	Dual Nature of Radiation and Matter	Photoelectric effect	Easy
12th	25	Ray Optics & Optical Instruments	Refraction through glass slab	Medium
11th	26	Thermal Properties of Matter	Newton's law of cooling	Medium
11th	27	Unit & Measurement	Dimensional Analysis	Easy

Chemistry (Section 3 & 4)

Chemistry had easy to moderate level of questions. Chemistry had 1 difficult, 9 medium and 12 easy level questions. Following is the question distribution table as per Class, Chapter, Topic, & Difficulty -

Class	Question No	Chapter Name	Topic Name	Difficulty Level
12th	31	Biomolecules	Proteins	Easy
11th	32	Chemical Bonding and Molecular Structure	Molecular Orbital Theory (Mot)	Medium
11th	33	Chemical Bonding and Molecular Structure	Valence Bond Theory (Vbt)	Easy
12th	34	Principles of Qualitative Analysis	Analysis of Acidic Radicals	Medium
12th	35	The P-Block Elements	Group 15 Elements	Easy
11th	36	Organic Chemistry Some Basic Principles and Techniques	Electron Displacements In Covalent Bonds	Easy
12th	37	Coordination Compounds	Bonding In Coordination Compounds	Medium
11th	38	Environmental Chemistry	Atmospheric Pollution	Easy
11th	39	The S-Block Elements	Compounds of Sodium and Potassium	Easy
12th	40	Chemistry In Everyday Life	Therapeutic Action of Different Classes of Drugs	Medium
11th	41	Hydrogen	Position of Hydrogen In The Periodic Table	Easy
12th	42	Polymers	Classification of Polymerisation Reaction	Easy
12th	43	Alcohols, Phenols and Ethers	Chemical Properties	Medium
12th	44	Electrochemistry	Molar Conductivity	Medium
12th	45	General Principles and Processes of Isolation of Elements	Extraction of Metals (General)	Easy
11th	46	The S-Block Elements	Group-2 Elements : Alkaline Earth Metals	Difficult
12th	47	Electrochemistry	Conductance Measurement	Medium
12th	48	General Principles and Processes of Isolation of Elements	Extractive Metallurgy	Easy
12th	49	Chemical Kinetics and Nuclear Chemistry	Numericals On Some Important First Order Reactions	Medium
11th	50	Structure of Atom	Developments Leading To The BohrS Model of Atom	Medium
11th	51	States of Matter	The Gas Laws	Easy
11th	52	Equilibrium	Applications of Equilibrium Constant	Easy

Mathematics (Section 5 & 6)

Mathematics was an equal mix of easy, moderate and difficult questions. Mathematics had 5 difficult, 7 easy questions, 8 medium questions. Mathematics was comparatively difficult than other two subjects. Following is the question distribution as per Class, Chapter, Topic & Difficulty -

Class	Question No	Chapter Name	Topic Name	Difficulty Level
12th	61	Application of Integrals	Area Under Simple Curves	Easy
12th	62	Probability	Conditional Probability	Easy
11th	63	Sequences and Series	A.M. and G.M. Inequality and Its Application	Easy
11th	64	Conic Sections	Hyperbola	Easy
11th	65	Quadratic Equations	Theory of equation	Medium
11th	66	Integrals	Definite Integral	Difficult
12th	67	Trigonometric Functions	Trigonometric Equations	Easy
11th	68	Binomial Theorem	Remainder	Difficult
11th	69	Sequences and Series	Logarithm	Easy
11th	70	Integrals	Definite Integral	Difficult
12th	71	Conic Sections	Hyperbola	Medium
11th	72	Permutations and Combinations	Divisors	Difficult
12th	73	Integrals	Definite Integral	Difficult
12th	74	Limits and Derivatives	Continuity and differentiability	Medium
12th	75	Determinants	Properties of Determinant	Medium
12th	76	Differential Equations	Methods of Solution of Ordinary Differential Equation of First Order and First Degree	Medium
12th	77	Differential Equations	Methods of Solution of Ordinary Differential Equation of First Order and First Degree	Medium
12th	78	Relations and Functions	Binary Operations	Medium
11th	79	Conic Sections	Circle	Medium
12th	80	Determinants	System of Equation	Easy

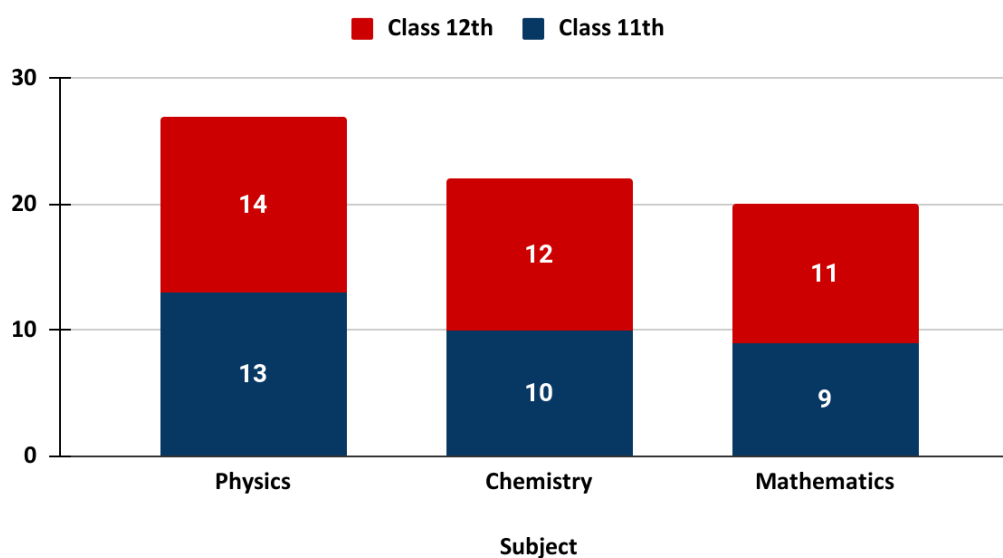
Class Wise Question Distribution

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	13	52	14	56	43%	47%
Chemistry	10	40	12	48	33%	40%
Mathematics	9	36	11	44	30%	37%

Grand Total	32	128	37	148	36%	41%
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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.

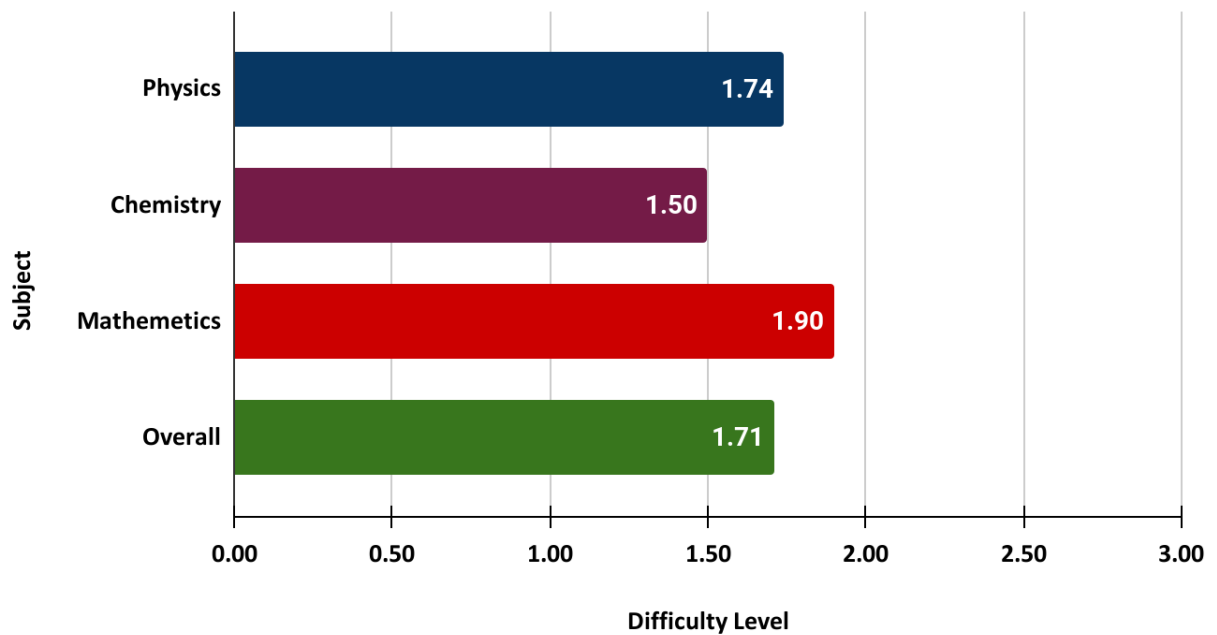
Easy - 1

Medium - 2

Difficult - 3

Subject	Difficulty Level
Physics	1.74
Chemistry	1.50
Mathematics	1.90
Overall	1.71

Overall Difficulty Level - JEE Main 2022 B.Tech



As per our expert faculties this year JEE Main (B.Tech) Shift 2 was a bit easier as that of the previous year. The Overall Difficulty rating for 2021 was 1.77 (moderately difficult)

