

A Detailed Analysis of JEE Main Session 2 Paper (B.E./B.Tech) 2023

6th April 2023 Shift 2 (3 am - 6 pm)

(Memory Based)

Disclaimer: Although students had to answer only 75 questions in exam, analysis below pertains to ≤ 90 questions

The JEE Main 2023 (B.E./B.Tech) exam is being conducted entirely in computer-based mode by the National Testing Agency (NTA). JEE Main Exam 2023 (B.E./B.Tech.) will be held on 6th, 8th, 10th, 11th, and 12th April, 2023. The paper will be conducted in two shifts, i.e. **first shift from 9:00 am to 12:00 pm & second shift from 3:00 pm to 6:00 pm.**

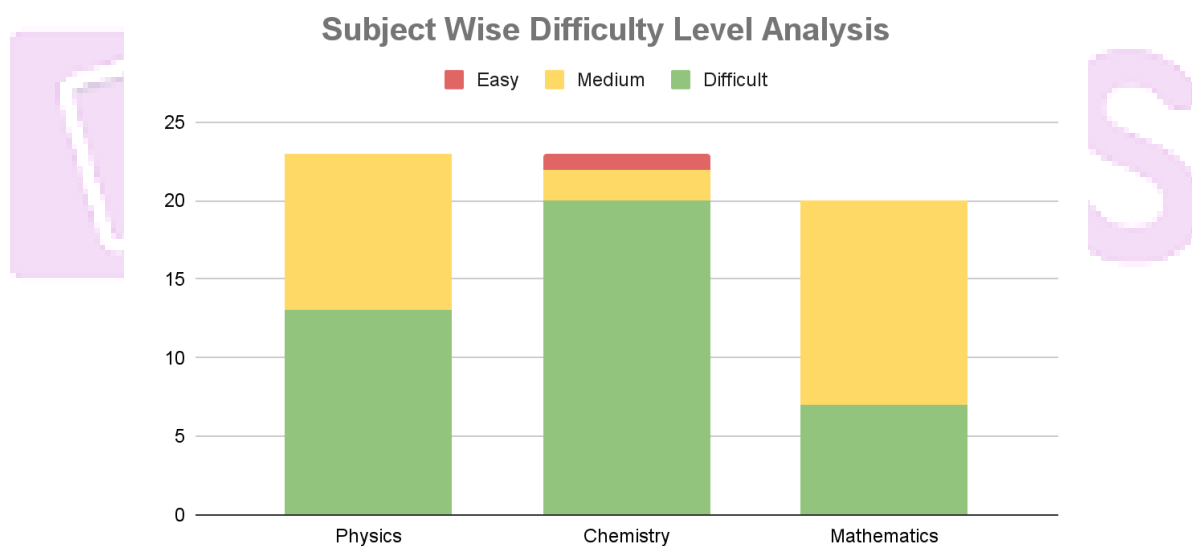
JEE Main Exam Pattern 2023: Paper 1 (B.E/B.Tech)

Particulars	Details
Exam Mode	Computer-based examination
Test Duration	Three hours
No. of Subjects	(i)Physics (ii)Chemistry (iii)Mathematics
Type of questions	MCQs: 4 options with only 1 correct option Numerical Value Questions: Questions whose answers are to be filled in as a numerical value
JEE Mains Total No. of questions Total: 75 Questions (25 questions in each subject)	Mathematics: 25 (20+10) 20 Questions were compulsory MCQ Based & 10 Questions were answers as a numerical value. Out of these 10 questions, 5 questions are compulsory. Physics: 25 (20+10) 20 Questions were compulsory MCQ Based & 10 Questions were answers as a numerical value. Out of these 10 questions, 5 questions are compulsory. Chemistry: 25 (20+10) 20 Questions were compulsory MCQ Based & 10 Questions were answers as a numerical value. Out of these 10 questions, 5 questions are compulsory.
JEE Mains Total Marks	300 Marks
JEE Main Marking Scheme	MCQ's: Four marks will be awarded for each correct answer and there will be a negative marking of one mark for each wrong answer. Questions with numerical value answers: Four marks will be awarded for each correct answer and there will be a negative marking of one mark for each wrong answer.

Subject Wise Difficulty Level Analysis

Although it was a memory-based question analysis, our experts could figure out **67 questions out of 90** i.e., **23** 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	13	52	10	40	0	0	23	92
Chemistry	20	80	2	8	1	4	23	92
Mathematics	7	28	13	52	0	0	20	80
Grand Total	40	160	25	100	1	4	66	264



- Physics was of moderate difficulty. It consisted mostly of easy & moderate questions. Questions were evenly distributed among all units and most of the questions were NCERT based.
- Chemistry had a mix of moderate and easy questions. The chemistry section consisted mostly of easy questions. Questions from Organic and Inorganic Chemistry were more in comparison to Physical Chemistry.
- Mathematics was a bit difficult to attempt. Mathematics consisted mostly of medium difficulty questions. Like shift 1 there were more questions on Algebra.

Question Wise Distribution Analysis

Following is the question distribution table as per Class,Chapter, Topic & Difficulty -

Physics

Date & Shift	Question No	Class	Section	Subject	Chapter Name	Topic Name	Difficulty Level
6th April/ Shift 2	1	11th	A	Physics	Motion In A Straight Line	Kinematics Equations	Easy
6th April/ Shift 2	2	12th	A	Physics	Atoms	Bohr's Theory	Medium
6th April/ Shift 2	3	11th	A	Physics	Gravitation	Acceleration Due to Gravity	Easy
6th April/ Shift 2	4	12th	A	Physics	Moving Charges & Magnetism	Motion Of Charged Particle In Magnetic Field	Medium
6th April/ Shift 2	5	12th	A	Physics	Electric Charges & Fields	Electric Dipole In Uniform Electric Field	Medium
6th April/ Shift 2	6	12th	A	Physics	Current Electricity	Electrical Circuit	Easy
6th April/ Shift 2	7	11th	A	Physics	Kinetic Theory Of Gases	R.M.S. Speed	Easy
6th April/ Shift 2	8	12th	A	Physics	Communication System	Modulation Index	Easy

6th April/ Shift 2	9	12th	A	Physics	Dual Nature Of Matter & Radiations	Einstein's Photoelectric Equation	Easy
6th April/ Shift 2	10	12th	A	Physics	Alterbating Current	AC Applied To Capacitor	Easy
6th April/ Shift 2	11	11th	A	Physics	Work Energy & Power	Collision	Medium
6th April/ Shift 2	12	11th	A	Physics	Mechanical Properties Of Fluids	Pascal's Law	Medium
6th April/ Shift 2	13	12th	A	Physics	Solids & Semiconductor Devices	PN Junction	Medium
6th April/ Shift 2	14	12th	A	Physics	Dual Nature Of Matter & Radiations	de Broglie Hypothesis	Easy
6th April/ Shift 2	15	11th	A	Physics	Gravitation	Kepler's Law	Easy
6th April/ Shift 2	16	11th	A	Physics	Motion In A Straight Line	Average Velocity	Medium
6th April/ Shift 2	17	11th	A	Physics	Thermal Properties Of Matter	Newton's Law Of Cooling	Medium
6th April/ Shift 2	18	12th	A	Physics	Current Electricity	Electrical Circuit	Medium

6th April/ Shift 2	19	12th	A	Physics	Electromagnetic Waves	Energy Density Of EM Waves	Easy
6th April/ Shift 2	20	12th	A	Physics	Ray Optics & Optical Instruments	Refraction Of Light	Medium
6th April/ Shift 2	21	11th	B	Physics	System Of particles & Rotational Motions	Radius Of Gyration	Easy
6th April/ Shift 2	22	11th	B	Physics	Newton's Laws Of Motion	Centrifugal Force	Easy
6th April/ Shift 2	23	11th	B	Physics	Kinetic Theory Of Gases	R. M. S. Speed of Gas Molecules	Easy

Chemistry

6th April/ Shift 2	31	12th	A	Chemistry	Haloalkanes and Haloarenes	Reaction mechanism	Medium
6th April/ Shift 2	32	12th	A	Chemistry	Alcohol Phenols and ether	Acidic strength	Easy
6th April/ Shift 2	33	12th	A	Chemistry	d & f block elements	Basic strength of metal oxide	Easy
6th April/ Shift 2	34	11th	A	Chemistry	Some basic concept of chemistry	Qualitative analysis	Easy

6th April/ Shift 2	35	11th	A	Chemistry	Hydrogen	Methods of Preparation of Hydrogen gas	Easy
6th April/ Shift 2	36	11th	A	Chemistry	s block elements	Important compound of group 2 elements	Easy
6th April/ Shift 2	37	11th	A	Chemistry	s block elements	Hydration enthalpy	Easy
6th April/ Shift 2	38	12th	A	Chemistry	d & f block elements	Oxidising properties of potassium permanganate	Easy
6th April/ Shift 2	39	12th	A	Chemistry	Coordination compounds	IUPAC nomenclature	Easy
6th April/ Shift 2	40	12th	A	Chemistry	Alcohol Phenols and ether	Dehydration	Medium
6th April/ Shift 2	41	11th	A	Chemistry	P block -I	Group 14	Easy
6th April/ Shift 2	42	12th	A	Chemistry	Alcohol Phenols and ether	Methods of Preparation of ether	Easy
6th April/ Shift 2	43	12th	A	Chemistry	Haloalkanes and Haloarenes	Polyhalides	Easy
6th April/ Shift 2	44	12th	A	Chemistry	Biomolecules	Amino acids	Easy

6th April/ Shift 2	45	12th	A	Chemistry	Chemistry in everyday life	Narcotic drugs	Easy
6th April/ Shift 2	46	11th	A	Chemistry	Atomic structure	Bohr Model	Easy
6th April/ Shift 2	47	11th	B	Chemistry	Chemical Bonding	VSEPR Theory	Easy
6th April/ Shift 2	48	11th	B	Chemistry	Redox Reactions	Titration	Easy
6th April/ Shift 2	49	12th	B	Chemistry	Amines	Gabriel Pthalamide reaction	Difficult
6th April/ Shift 2	50	12th	B	Chemistry	solid state	Lattice types	Easy
6th April/ Shift 2	51	12th	B	Chemistry	Aldehydes Ketones and carboxylic acid	Iodoform test	Easy
6th April/ Shift 2	52	11th	B	Chemistry	Atomic structure	Bohr Model	Easy
6th April/ Shift 2	53	12th	B	Chemistry	Solutions	Colligative property	Easy

Mathematics

6th April/ Shift 2	61	12th	A	Mathematics	Definite Integrals	Properties of Definite Integrals	Easy
6th April/ Shift 2	62	12th	A	Mathematics	Determinant	Solution of system of equation	Medium
6th April/ Shift 2	63	11th	A	Mathematics	Binomial Theorem	Divisibility using Binomial Theorem	Medium
6th April/ Shift 2	64	11th	A	Mathematics	Binomial Theorem	General terms	Medium
6th April/ Shift 2	65	11th	A	Mathematics	Sequence and series	Geometric progression	Medium
6th April/ Shift 2	66	11th	A	Mathematics	Sequence and series	Miscellaneous series	Medium
6th April/ Shift 2	67	12th	A	Mathematics	Complex numbers	Real part & Imaginary part	Medium
6th April/ Shift 2	68	11th	A	Mathematics	Circle	Length of tangent	Medium
6th April/ Shift 2	69	12th	A	Mathematics	3D Geometry	Family of plane	Easy
6th April/ Shift 2	70	12th	A	Mathematics	Vector Algebra	Scaler triple product	Easy

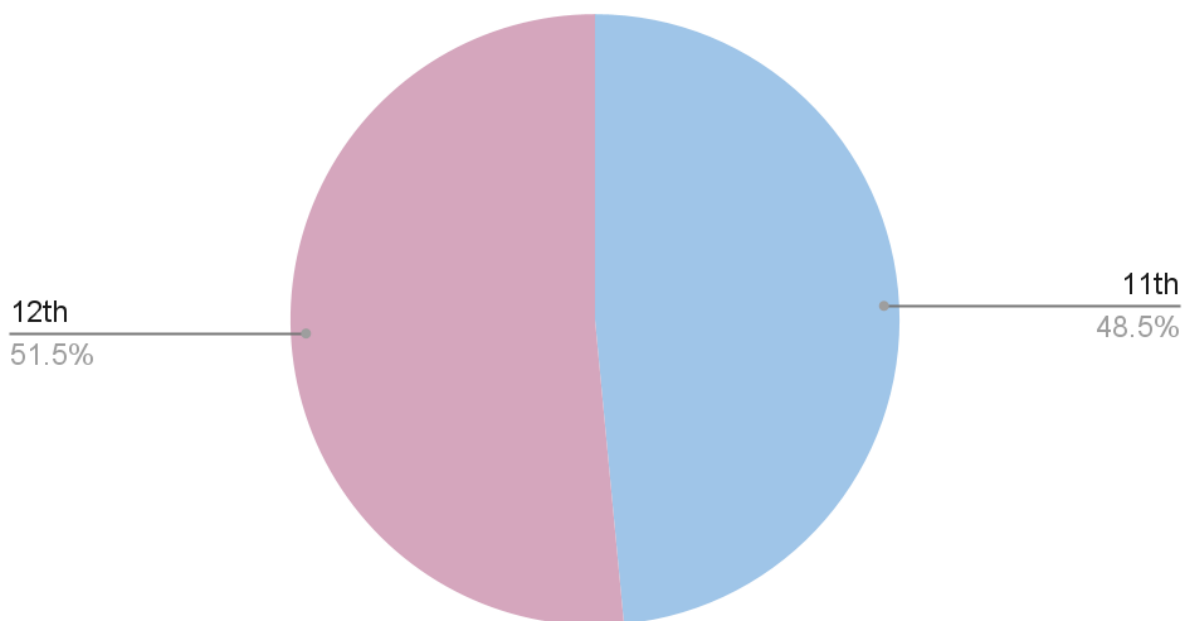
6th April/ Shift 2	71	11th	A	Mathematics	Mathematical reasoning	Tautology and contradiction	Medium
6th April/ Shift 2	72	12th	A	Mathematics	Differential Equation	Inspection method	Medium
6th April/ Shift 2	73	11th	A	Mathematics	Sets and ellipse	Inclusion exclusion	Easy
6th April/ Shift 2	74	11th	B	Mathematics	Conics 2	Ellipse and Hyperbola	Medium
6th April/ Shift 2	75	11th	B	Mathematics	Permutations and Combinations	Permutations	Medium
6th April/ Shift 2	76	11th	B	Mathematics	Application of Integrals	Area enclosed under two curves	Easy
6th April/ Shift 2	77	11th	B	Mathematics	Permutations and Combinations	Permutations	Medium
6th April/ Shift 2	78	12th	B	Mathematics	Probability	P & C Based	Easy
6th April/ Shift 2	79	12th	B	Mathematics	Matrices	Algebra of matrices	Medium
6th April/ Shift 2	80	11th	B	Mathematics	Trigonometric Functions	Trigonometric ratio of compound angles	Easy

Class Wise Distribution Level Analysis

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	
	No. of Questions	Total Marks	No. of Questions	Total Marks
Physics	11	44	12	48
Chemistry	9	36	14	56
Mathematics	12	48	8	32
Grand Total	32	128	34	136

Class Wise Distribution Analysis



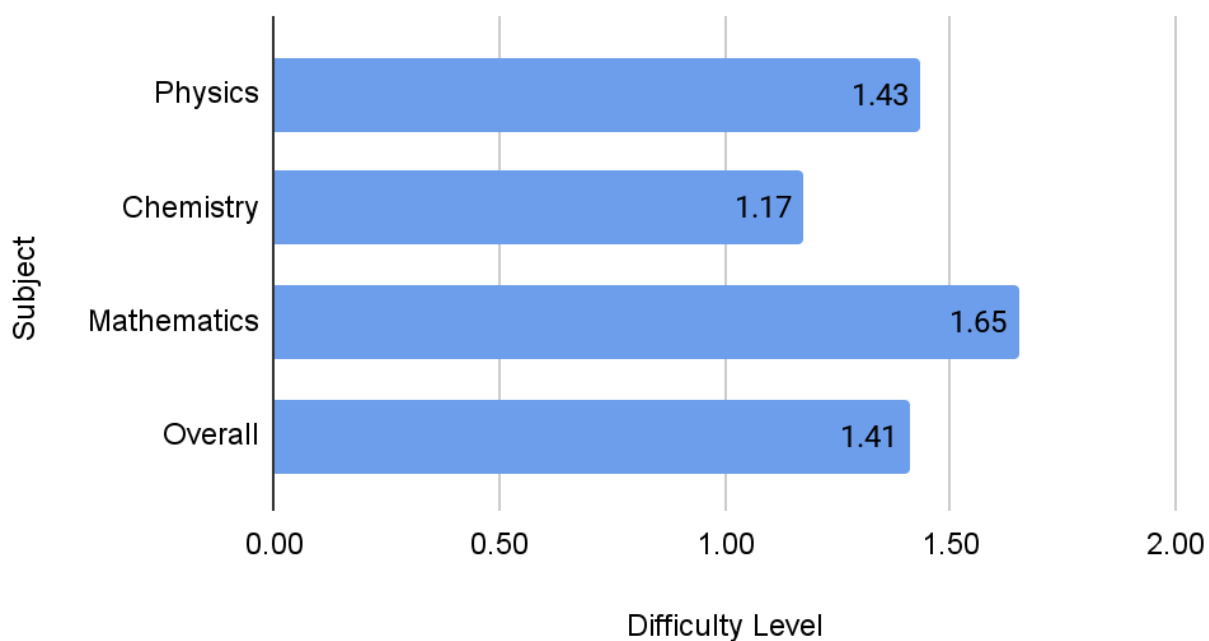
Overall Difficulty Level Analysis

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	1.43
Chemistry	1.17
Mathematics	1.65
Overall	1.41

Overall Difficulty Level JEE Mains (Session 1) 2023



Conclusion

The overall difficulty rating for **JEE Mains Session 2 (6th April, Shift 2) 2023** was **1.41**, which was considered moderately difficult. Overall mathematics was the most difficult subject to attempt. The order of difficulty in different subjects, as assessed by our experts is Mathematics > Physics > Chemistry.

