

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

10th April 2023 Shift 1 (9 am - 12 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.**

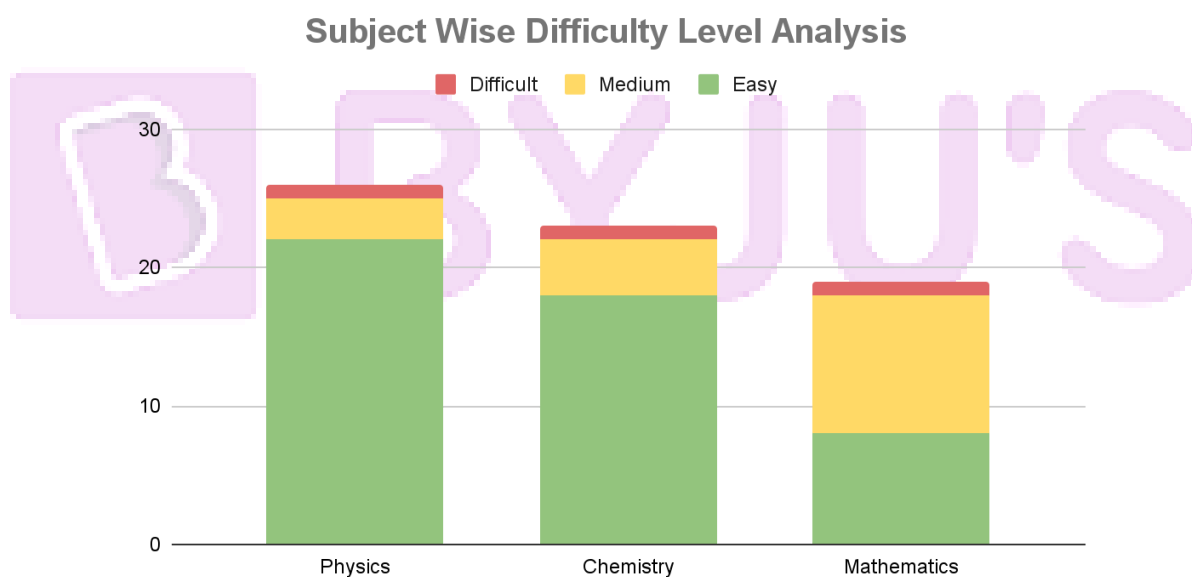
JEE Main Exam Pattern 2023: Paper 1 (B.E/B.Tech)

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 **68 questions out of 90** i.e., **26** questions in Physics, **23** questions in Chemistry and **19** 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	22	88	3	12	1	4	26	104
Chemistry	18	72	4	16	1	4	23	92
Mathematics	8	32	10	40	1	4	19	76
Grand Total	48	192	17	68	3	12	68	272



- Physics was rated as easy on the difficulty level. It consisted mostly of easy & moderate questions. Questions were evenly distributed among all units and most of the questions were NCERT based.
- Chemistry was rated as easy to moderate on difficulty level. More weightage was given to Inorganic Chemistry compared to Physical Chemistry and Organic Chemistry.
- Mathematics was rated as easy to moderate. Questions were asked from all chapters. Emphasis was on Algebra and Coordinate Geometry.

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
10th April/ Shift 1	1	12th	A	Physics	Electrostatic Potential & Capacitance	Grouping Of Capacitors	Easy
10th April/ Shift 1	2	11th	A	Physics	Work Energy & Power	Perfectly Inelastic Collision	Easy
10th April/ Shift 1	3	11th	A	Physics	Gravitation	Variation In Acceleration Due to Gravity	Easy
10th April/ Shift 1	4	12th	A	Physics	Current Electricity	Balanced Wheatstone Bridge	Easy
10th April/ Shift 1	5	11th	A	Physics	Thermal Properties Of Matter	Wein's Displacement Law	Easy
10th April/ Shift 1	6	11th	A	Physics	Thermodynamics	Adiabatic Process	Easy
10th April/ Shift 1	7	11th	A	Physics	Motion In A Plane	Projectile Motion	Easy
10th April/ Shift 1	8	12th	A	Physics	Alternating Current	Series LCR Circuit	Medium
10th April/ Shift 1	9	12th	A	Physics	Nuclei	Radioactivity	Easy
10th April/ Shift 1	10	11th	A	Physics	Units & Measurements	Percentage Error	Easy

10th April/ Shift 1	11	11th	A	Physics	Oscillations	S.H.M.	Easy
10th April/ Shift 1	12	12th	A	Physics	Moving Charges & Magnetism	Magnetic Field Due To A Solenoid	Easy
10th April/ Shift 1	13	11th	A	Physics	Motion In A Straight Line	Potition Time Graph	Easy
10th April/ Shift 1	14	12th	A	Physics	Atoms	Bohr's Theory	Easy
10th April/ Shift 1	15	11th	A	Physics	Gravitation	Satellite Motion	Easy
10th April/ Shift 1	16	12th	A	Physics	Nuclei	Radioactivity	Easy
10th April/ Shift 1	17	12th	A	Physics	Ray Optics & Optical Instruments	Refraction Through Lens	Medium
10th April/ Shift 1	18	11th	A	Physics	Mechanical Properties Of Solids	Young's Modulus	Easy
10th April/ Shift 1	19	12th	B	Physics	Electromagnetic Induction	Motional EMF	Easy
10th April/ Shift 1	20	12th	B	Physics	Current Electricity	Grouping Of Resistors	Easy
10th April/ Shift 1	21	11th	B	Physics	Waves	Velocity Of Progressive Wave	Easy
10th April/ Shift 1	22	11th	B	Physics	System Of Particles & Rotational Motion	Kepler's Law & Conservation Of Angular Momentum	Medium
10th April/ Shift 1	23	12th	B	Physics	Current Electricity	Grouping Of Resistors	Easy

10th April/ Shift 1	24	12th	B	Physics	Ray Optics & Optical Instruments	Image Formation Due To Plane Mirrors	Easy
10th April/ Shift 1	25	12th	B	Physics	Communication Systems	Amplitude Modulation	Easy
10th April/ Shift 1	26	12th	B	Physics	Electrostatic Potential & Capacitance	Potential Due To Concentric Shells	Difficult

Chemistry

10th April/ Shift 1	31	11th	A	Chemistry	Thermodynamics	Enthalpy change	Easy
10th April/ Shift 1	32	12th	A	Chemistry	Metallurgy	Concentration of ores	Easy
10th April/ Shift 1	33	12th	A	Chemistry	Biomolecules	Proteins	Easy
10th April/ Shift 1	34	12th	A	Chemistry	Coordination compounds	VSEPR Theory	Easy
10th April/ Shift 1	35	11th	A	Chemistry	s block elements	Group I elements	Easy
10th April/ Shift 1	36	11th	A	Chemistry	Some basic concept of chemistry	Mole concept	Easy
10th April/ Shift 1	37	11th	A	Chemistry	Thermodynamics	Enthalpy	Easy
10th April/ Shift 1	38	12th	A	Chemistry	d & f block elements	Compounds of iron	Easy

10th April/ Shift 1	39	12th	A	Chemistry	d & f block elements	Properties of potassium dichromate	Easy
10th April/ Shift 1	40	12th	A	Chemistry	Polymers	Classification of Polymers	Easy
10th April/ Shift 1	41	12th	A	Chemistry	Haloalkanes and haloarenes	Physical properties	Medium
10th April/ Shift 1	42	12th	A	Chemistry	Hydrocarbons	Oxidation of benzene	Difficult
10th April/ Shift 1	43	12th	A	Chemistry	Electrochemistry	Standard electrode potential	Medium
10th April/ Shift 1	44	11th	A	Chemistry	Some basic concept of chemistry	Qualitative analysis	Easy
10th April/ Shift 1	45	12th	A	Chemistry	Solutions	Colligative properties	Easy
10th April/ Shift 1	46	12th	A	Chemistry	d & f block elements	Reduction potential	Medium
10th April/ Shift 1	47	11th	A	Chemistry	Environmental chemistry	Industrial pollutants	Easy
10th April/ Shift 1	48	12th	B	Chemistry	Solutions	Colligative properties	Easy
10th April/ Shift 1	49	12th	B	Chemistry	Chemical Kinetics	Parallel reaction	Medium
10th April/ Shift 1	50	12th	B	Chemistry	Amines	Gabriel Pthalamide synthesis	Easy
10th April/ Shift 1	51	11th	B	Chemistry	Chemical Bonding	VSEPR Theory	Easy

10th April/ Shift 1	52	11th	B	Chemistry	Chemical Bonding	VSEPR Theory	Easy
10th April/ Shift 1	53	11th	B	Chemistry	States of Matter	Gas laws	Easy

Mathematics

10th April/ Shift 1	61	11th	A	Mathematics	Sequence and series	Arithmetic progression	Easy
10th April/ Shift 1	62	12th	A	Mathematics	Application of Derivatives	Practical problems of Maxima and Minima	Medium
10th April/ Shift 1	63	11th	A	Mathematics	Mathematical Reasoning	Negation	Easy
10th April/ Shift 1	64	12th	A	Mathematics	Differential Equations	Homogeneous Differential Equations	Medium
10th April/ Shift 1	65	11th	A	Mathematics	Permutations and Combinations	Permutations	Easy
10th April/ Shift 1	66	12th	A	Mathematics	Matrices and Determinant	Determinants	Easy
10th April/ Shift 1	67	11th	A	Mathematics	Trigonometry	Compound angle	Easy
10th April/ Shift 1	68	11th	A	Mathematics	Binomial Theorem	Coefficients of Term	Medium
10th April/ Shift 1	69	11th	A	Mathematics	Quadratic	Inequality	Medium
10th April/ Shift 1	70	12th	A	Mathematics	3D Geometry	Skew lines	Easy

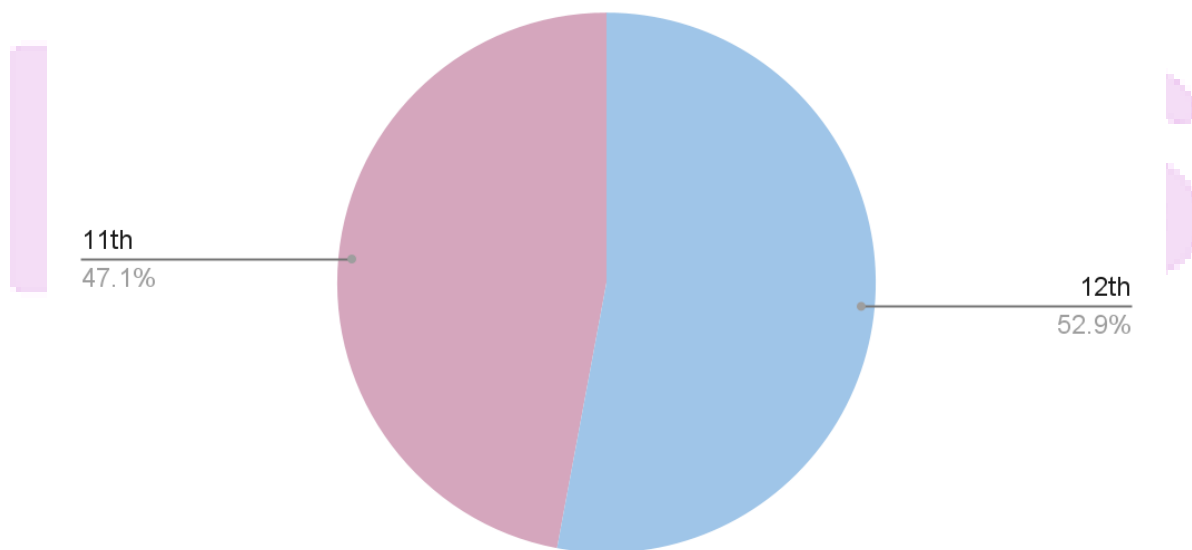
10th April/ Shift 1	71	11th	A	Mathematics	Sequence and series	Geometric Progression	Medium
10th April/ Shift 1	72	12th	A	Mathematics	Indefinite Integration	Indefinite Integration	Medium
10th April/ Shift 1	73	11th	B	Mathematics	Binomial Theorem	General Term	Medium
10th April/ Shift 1	74	12th	B	Mathematics	Probability	Based on Permutation and combination	Medium
10th April/ Shift 1	75	11th	B	Mathematics	Permutations and combination	Permutations	Medium
10th April/ Shift 1	76	12th	B	Mathematics	Continuity and differentiability	Differentiability at a point	Difficult
10th April/ Shift 1	77	12th	B	Mathematics	Definite Integrals	Newton Leibnitz formula	Medium
10th April/ Shift 1	78	11th	B	Mathematics	Statistics	Variance	Easy
10th April/ Shift 1	79	11th	B	Mathematics	Conic Section 2	Ellipse	Easy

Class Wise Distribution Level Analysis

As per our expert faculties, the questions from the **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	12	48	14	56
Chemistry	9	36	14	56
Mathematics	11	44	8	32
Grand Total	32	128	36	144

Class Wise Distribution Analysis



- In Physics, questions had an approximately equal weightage from Class 11th & Class 12th syllabus.
- In Chemistry, majorly questions were from the Class 12th syllabus.
- In Mathematics, majorly questions were from the Class 11th syllabus.
- Overall the questions distribution was dominated by Class 12th syllabus.

Overall Difficulty Level Analysis

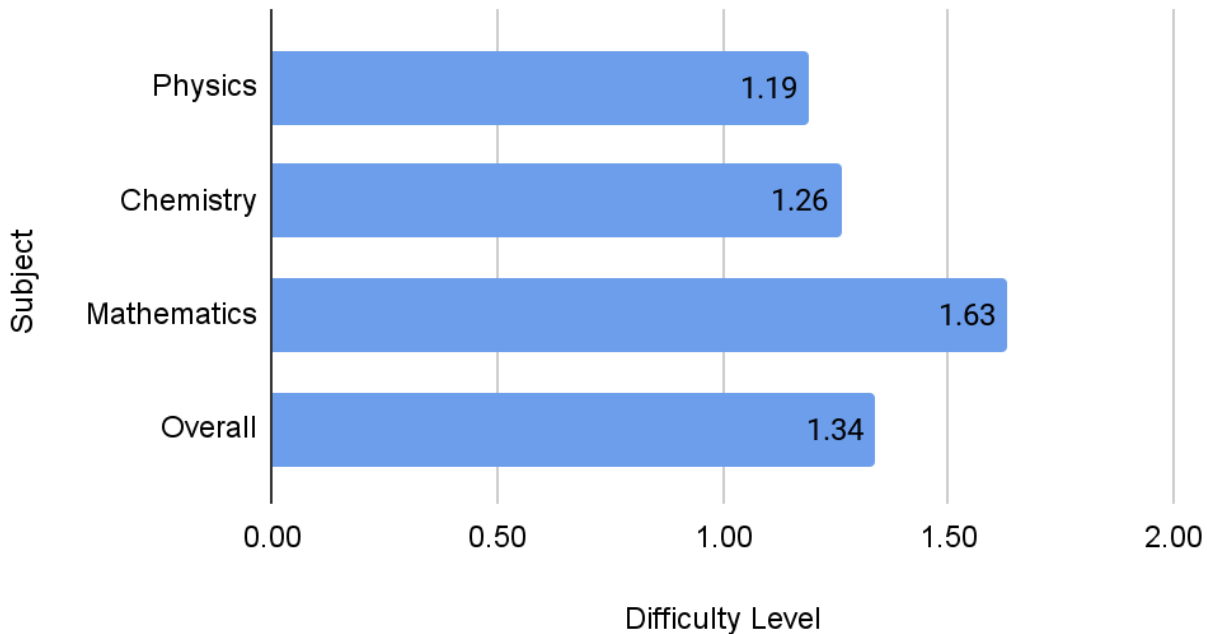
In this analysis, we have rated every question on a scale of 1 to 3. The ratings are done by our expert faculty. The individual ratings are then averaged to calculate the overall difficulty level.

- Easy - 1
- Medium - 2
- Difficult - 3

Subject	Difficulty Level
Physics	1.19
Chemistry	1.26
Mathematics	1.63
Overall	1.34



Overall Difficulty Level JEE Mains (Session 1) 2023



Conclusion

The overall difficulty of **JEE Main (Session 2) 10th April 2023 - Shift 1** was **easy to moderate. Mathematics was the most difficult subject to attempt out of all three subjects.**

The order of difficulty in different subjects- as assessed by our experts is Mathematics > Chemistry > Physics.

