

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

8th 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)

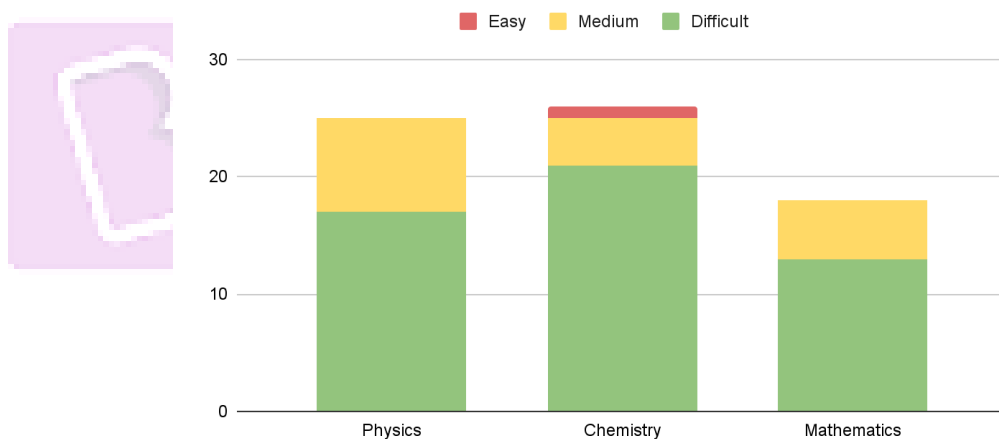
Particulars	Details
Exam Mode	Computer-based examination
Test Duration	Three hours
No. of Subjects	(i)Physics (ii)Chemistry (iii)Mathematics
Type of questions	MCQs: 4 options with only 1 correct option Numerical Value Questions: Questions whose answers are to be filled in as a numerical value
JEE Mains 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 **71 questions out of 90** i.e., **25** questions in Physics, **26** 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	17	68	8	32	0	0	25	100
Chemistry	21	84	4	16	1	4	26	104
Mathematics	9	36	9	36	2	8	20	80
Grand Total	47	188	21	84	3	12	71	284

Subject Wise Difficulty Level Analysis



- 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 Inorganic were more in comparison to Physical Chemistry & Organic Chemistry.
- Mathematics was of moderate difficulty. It consisted mostly of easy & moderate questions. More emphasis was given to chapters pertaining to Algebra and Calculus.

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
8th April/ Shift 1	1	12th	A	Physics	Dual Nature Of Matter & Radiations	de Broglie Hypothesis	Easy
8th April/ Shift 1	2	11th	A	Physics	Gravitation	Variation In Acceleration Due To Gravity	Easy
8th April/ Shift 1	3	11th	A	Physics	Motion In A Plane	Projectile Motion	Easy
8th April/ Shift 1	4	11th	A	Physics	Motion In A Plane	Vector Addition	Easy
8th April/ Shift 1	5	11th	A	Physics	Mechanical Properties OF Fluids	Pressure	Medium
8th April/ Shift 1	6	12th	A	Physics	Communication Systems	Height Of Antenna	Easy
8th April/ Shift 1	7	12th	A	Physics	Electric Charges & Fields	Electric Field due to a Shell	Easy
8th April/ Shift 1	8	11th	A	Physics	Units & Measurements	Error Analysis	Medium

8th April/ Shift 1	9	12th	A	Physics	Nuclei	Binding Energy	Easy
8th April/ Shift 1	10	12th	A	Physics	Current Electricity	Electrical Circuits	Easy
8th April/ Shift 1	11	12th	A	Physics	Moving Charges & Magnetism	Motion Of Charged Particle In Magnetic Field	Easy
8th April/ Shift 1	12	11th	A	Physics	Units & Measurements	Dimensional Analysis	Easy
8th April/ Shift 1	13	12th	A	Physics	Alternating Current	LC Oscillations	Medium
8th April/ Shift 1	14	11th	A	Physics	System Of Particles & Rotational Motion	Moment Of Inertia	Easy
8th April/ Shift 1	15	11th	A	Physics	Gravitation	Satellite Motion	Medium
8th April/ Shift 1	16	11th	A	Physics	Thermodynamics	First Law Of Thermodynamics	Medium
8th April/ Shift 1	17	12th	A	Physics	Ray Optics & Optical Instruments	Optical Instruments	Easy
8th April/ Shift 1	18	12th	A	Physics	Solids & Semiconductor Devices	Logic Gate	Easy

8th April/ Shift 1	19	11th	A	Physics	Kinetic Theory Of Gases	Ideal Gas Equation	Medium
8th April/ Shift 1	20	12th	A	Physics	Waves	Doppler's Effect	Easy
8th April/ Shift 1	21	12th	B	Physics	Ray Optics & Optical Instruments	Image formation due to Plane Mirror	Medium
8th April/ Shift 1	22	12th	B	Physics	Moving Charges & Magnetism	Magnetic Field Due To A Solenoid	Easy
8th April/ Shift 1	23	11th	B	Physics	Laws Of Motion	Force On A Particle	Easy
8th April/ Shift 1	24	11th	B	Physics	Work Energy & Power	Relation Between Kinetic Energy & Momentum	Medium
8th April/ Shift 1	25	12th	B	Physics	Electric Charges & Fields	Torque Acting On A Dipole	Easy

Chemistry

8th April/ Shift 1	31	11th	A	Chemistry	S block elements	Group 2 reactivity order	Easy
8th April/ Shift 1	32	12th	A	Chemistry	P block elements	group 18 - Noble gases	Easy
8th April/ Shift 1	33	12th	A	Chemistry	Metallurgy	Concentration of ore	Easy

Shift 1							
8th April/ Shift 1	34	12th	A	Chemistry	P block elements	Group 17 - Halogens	Easy
8th April/ Shift 1	35	11th	A	Chemistry	S block elements	Anomalous behaviour of Li and Mg	Easy
8th April/ Shift 1	36	11th	A	Chemistry	S block elements	Important compounds of s block elements	Easy
8th April/ Shift 1	37	12th	A	Chemistry	Aldehydes , Ketones and Carboxylic acid	Reduction	Medium
8th April/ Shift 1	38	12th	A	Chemistry	Surface Chemistry	Freudlich adsorption isotherm	Easy
8th April/ Shift 1	39	12th	A	Chemistry	Electrochemistry	Cell notation	Easy
8th April/ Shift 1	40	11th	A	Chemistry	Redox reaction	Equation balancing	Easy
8th April/ Shift 1	41	11th	A	Chemistry	Atomic structure	de Broglie hypothesis	Easy
8th April/ Shift 1	42	12th	A	Chemistry	Coordination compound	VSEPR Theory	Easy
8th April/ Shift 1	43	11th	A	Chemistry	Periodic classification	Electronegativity	Easy
8th April/ Shift 1	44	12th	A	Chemistry	d and f block elements	Chromyl chloride test	Easy
8th April/ Shift 1	45	11th	A	Chemistry	Surface Chemistry	Catalysis	Easy
8th April/ Shift 1	46	12th	A	Chemistry	Haoalkane and haloarenes	Halogenation of alkanes	Difficult

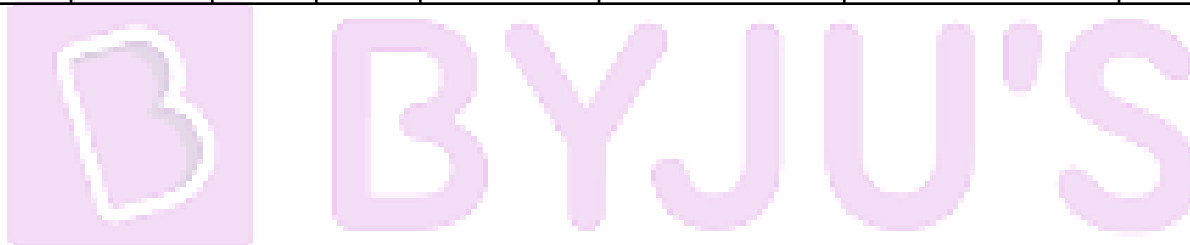
Shift 1							
8th April/ Shift 1	47	12th	A	Chemistry	Coordination compound	Magnetic moment	Easy
8th April/ Shift 1	48	12th	A	Chemistry	Aldehydes , Ketones and Carboxylic acid & Amines	Confirmatory tests	Easy
8th April/ Shift 1	49	12th	A	Chemistry	Chemistry in everyday life	Artificial sweetners	Easy
8th April/ Shift 1	50	12th	A	Chemistry	Amines	Reagents	Easy
8th April/ Shift 1	51	11th	B	Chemistry	Chemical Bonding	Fajan's rule	Easy
8th April/ Shift 1	52		B	Chemistry	States of matter	Vapour pressure	Medium
8th April/ Shift 1	53	12th	B	Chemistry	Chemical Kinetics	Arrhenius equation	Easy
8th April/ Shift 1	54	12th	B	Chemistry	Biomolecules	Amino acids	Medium
8th April/ Shift 1	55	11th	B	Chemistry	Some basic concept of chemistry	Qualitative analysis	Easy
8th April/ Shift 1	56	11th	A	Chemistry	Environmental chemistry	water pollutants	Medium

Mathematics

8th April/ Shift 1	61	12th	A	Mathematics	3D Geometry	Skew lines	Easy
8th	62	11th	A	Mathematics	Permutation and	Restricted	Easy

April/ Shift 1					Combination	Arrangement	
8th April/ Shift 1	63	11th	A	Mathematics	Permutation and Combination	Circular Permutation	Medium
8th April/ Shift 1	64	11th	A	Mathematics	Statistics	Mean and Variance	Medium
8th April/ Shift 1	65	11th	A	Mathematics	Binomial Theorem	Independent Terms	Easy
8th April/ Shift 1	66	11th	A	Mathematics	Vectors	Dot and Cross Product	Medium
8th April/ Shift 1	67	11th	A	Mathematics	Binomial Theorem	General terms	Medium
8th April/ Shift 1	68	12th	A	Mathematics	Application of Integrals	Area Bonded by two curves	Medium
8th April/ Shift 1	69	12th	A	Mathematics	Matrices	Orthogonal matrix	Difficult
8th April/ Shift 1	70	12th	A	Mathematics	Probability	Bay's Theorem	Medium
8th April/ Shift 1	71	11th	A	Mathematics	Relations and Functions	Cartesan products of two sets	Easy
8th April/ Shift 1	72	11th	A	Mathematics	Relations and Functions	Even and odd functions	Easy
8th April/ Shift 1	73	12th	A	Mathematics	Indefinite Integrals	Integration of partial fraction	Difficult
8th April/ Shift 1	74	11th	A	Mathematics	Sequence and Series	Miscellaneous sequences	Easy
8th	75	11th	A	Mathematics	Mathematical	Implication	Medium

April/ Shift 1					reasoning		
8th April/ Shift 1	76	12th	B	Mathematics	Application of Derivatives	Maxima and minima	Medium
8th April/ Shift 1	77	11th	B	Mathematics	Permutations and Combination	Exponent of Prime p in n	Easy
8th April/ Shift 1	78	12th	B	Mathematics	Determinants	Adjoint of matrix	Easy
8th April/ Shift 1	79	12th	B	Mathematics	Definite Integrals	Properties of Definite integrals	Medium
8th April/ Shift 1	80	11th	B	Mathematics	Limits and Derivatives	Standard limit	Easy

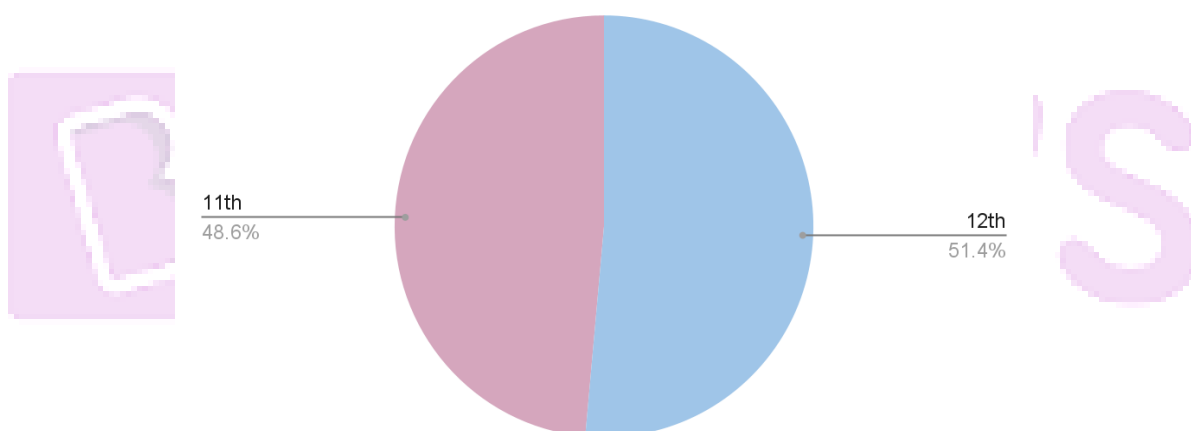


Class Wise Distribution Level Analysis

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	12	48	13	52
Chemistry	10	40	15	60
Mathematics	12	48	8	32
Grand Total	34	136	36	144

Class Wise Distribution Analysis



Overall Difficulty Level Analysis

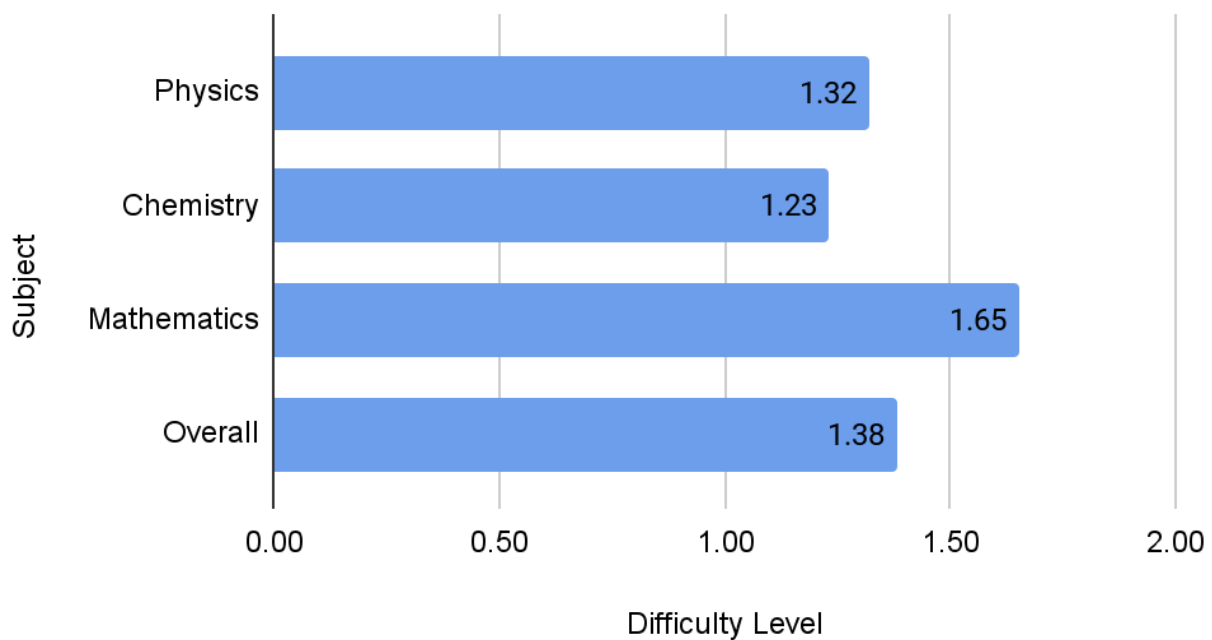
In this analysis, we have rated every question on a scale of 1 to 3. The ratings are done by our expert faculty. The individual ratings are then averaged to calculate the overall difficulty level.

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

Subject	Difficulty Level
Physics	1.32
Chemistry	1.23
Mathematics	1.65
Overall	1.38



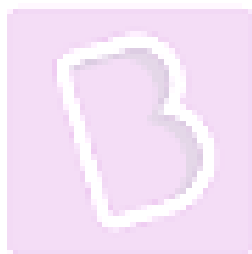
Overall Difficulty Level JEE Mains (Session 1) 2023



Conclusion

The overall difficulty of JEE Main (Session 2) 8th 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 > Physics > Chemistry.



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