

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

11th April 2023 Shift 2 (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)

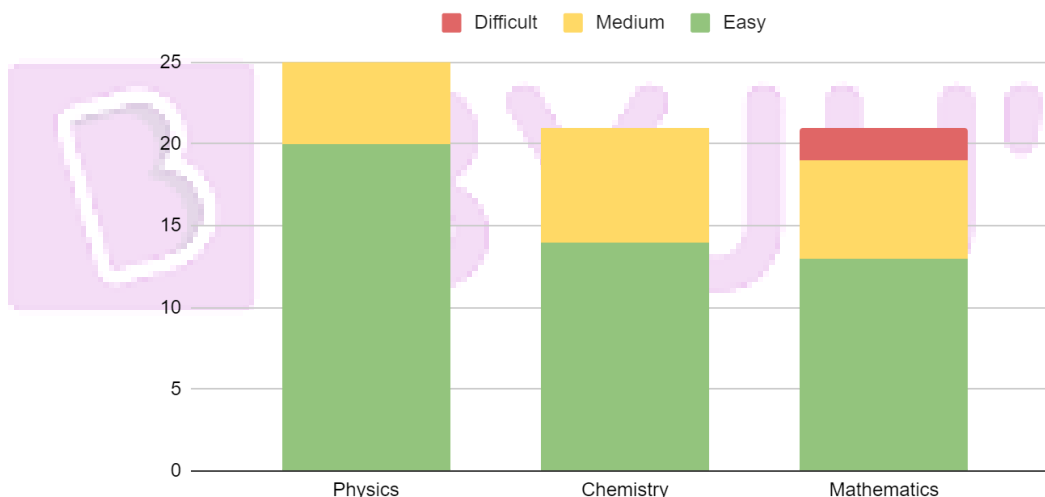
Particulars	Details
Exam Mode	Computer-based examination
Test Duration	Three hours
No. of Subjects	(i)Physics (ii)Chemistry (iii)Mathematics
Type of questions	MCQs: 4 options with only 1 correct option Numerical Value Questions: Questions whose answers are to be filled in as a numerical value
JEE Mains 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 **67 questions out of 90** i.e., **25** questions in Physics, **21** questions in Chemistry and **21** 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	20	80	5	20	0	0	25	100
Chemistry	14	56	7	28	0	0	21	84
Mathematics	13	52	6	24	2	8	21	84
Grand Total	47	188	18	72	2	8	67	268

Subject Wise Difficulty Level Analysis



- 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
11th April Shift1	1	12th	A	Physics	Solids & Semiconductor Devices	Logic Gates	Easy
11th April Shift1	2	11th	A	Physics	Work Energy & Power	Work Done By Variable Force	Easy
11th April Shift1	3	12th	A	Physics	Nuclei	Radioactivity	Easy
11th April Shift1	4	12th	A	Physics	Electromagnetic Induction	Induced EMF	Easy
11th April Shift1	5	12th	A	Physics	Moving Charges & Magnetism	Magnetic Moment	Easy
11th April Shift1	6	12th	A	Physics	Alternating Current	Inductive and Capacitive Reactance	Medium
11th April Shift1	7	12th	A	Physics	Current Electricity	Electrical Circuits	Easy
11th April Shift1	8	11th	A	Physics	Motion In A Straight Line	Area Under Velocity Time Graph	Easy
11th April Shift1	9	12th	A	Physics	Ray Optics & Optical Instruments	Speed Of Light & Refractive Index	Easy
11th April Shift1	10	12th	A	Physics	Moving Charges & Magnetism	Moving Coil Galvanometer	Medium
11th April	11	12th	A	Physics	Electric Charges & Fields	Equilibrium Of Charges	Medium

Shift1							
11th April Shift1	12	11th	A	Physics	Gravitation	Acceleration Due To Gravity	Easy
11th April Shift1	13	12th	A	Physics	Electrostatic Potential & Capacitance	Sharing Of Energy Between Charged Capacitors	Medium
11th April Shift1	14	11th	A	Physics	Laws Of Motion	Dynamics Of Circular Motion	Easy
11th April Shift1	15	12th	A	Physics	Dual Nature Of Matter & Radiation	Photoelectric Effect	Medium
11th April Shift1	16	11th	A	Physics	Kinetic Theoru Of Gases	RMS, MP and Average Speed of Gas Molecules	Easy
11th April Shift1	17	12th	A	Physics	Current Electricity	Electrical Power	Easy
11th April Shift1	18	11th	A	Physics	Units & Measurements	Units	Easy
11th April Shift1	19	11th	A	Physics	Oscillations	Variation Of Kinetic Energy with Positiojn	Easy
11th April Shift1	20	11th	A	Physics	Thermal Properties Of Matter	Measurement Of Temperature	Easy
11th April Shift1	21	11th	B	Physics	Waves	Speed Of Waves	Easy
11th April Shift1	22	11th	B	Physics	Laws Of Motion	Conservation Of Momentum	Easy
11th April Shift1	23	11th	B	Physics	Motion In A Plane	Projectile Motion	Easy
11th April	24	12th	B	Physics	Communication System	Distance Of Transmission	Easy

Shift1							
11th April Shift1	25	12th	B	Physics	Magnetism & Matter	Magnetic Field inside A Material	Easy

Chemistry

11th April Shift1	31	11th	A	Chemistry	States of matter	Kinetic Theory of gases	Easy
11th April Shift1	32	11th	A	Chemistry	Periodic classification	Ionisation enthalpy	Easy
11th April Shift1	33	11th	A	Chemistry	Chemical Bonding	VSEPR Theory	Easy
11th April Shift1	34	11th	A	Chemistry	General Organic Chemistry	Electrophilic aromatic substitution	Medium
11th April Shift1	35	12th	A	Chemistry	Amines	Reactions with nitrous acid	Medium
11th April Shift1	36	12th	A	Chemistry	Aldehyde ketones and carboxylic acid	Oxidation and nucleophilic addition reaction	Medium
11th April Shift1	37	12th	A	Chemistry	Coordination chemistry	Classification of ligands	Easy
11th April Shift1	38	12th	A	Chemistry	Coordination chemistry	Isomerism	Easy
11th April Shift1	39	12th	A	Chemistry	Polymers	Ziegler-Natta catalyst	Easy
11th April Shift1	40	11th	A	Chemistry	P block elements- I	Group -13 elements	Medium
11th April	41	11th	A	Chemistry	s block elements	Important usage of s block elements	Easy

Shift1							
11th April Shift1	42	12th	A	Chemistry	Metallurgy	Extraction of copper metal	Easy
11th April Shift1	43	12th	A	Chemistry	Surface Chemistry	Zeta Potential	Medium
11th April Shift1	44	12th	A	Chemistry	Biomolecules	Schiff's Test	Medium
11th April Shift1	45	11th	A	Chemistry	Environmental chemistry	BOD	Easy
11th April Shift1	46	12th	A	Chemistry	Solution	Colligative properties	Easy
11th April Shift1	47	12th	B	Chemistry	Coordination chemistry	VSEPR Theory	Easy
11th April Shift1	48	11th	B	Chemistry	Some basic concept of chemistry	Concentration terms	Easy
11th April Shift1	49	12th	B	Chemistry	Aldehyde ketones and carboxylic acid	Grignard reagent	Easy
11th April Shift1	50	12th	B	Chemistry	Solid state	Density of a unit cell	Easy
11th April Shift1	51	11th	B	Chemistry	Redox reactions	Electrode potential	Medium

Mathematics

11th April Shift1	61	11th	A	Mathematics	Permutations and Combinations	Division and distrubution	Easy
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11th April Shift1	62	12th	A	Mathematics	Probability	Independent events	Medium
11th April Shift1	63	12th	A	Mathematics	Limit Continuity and Differentiability	Continuity	Easy
11th April Shift1	64	11th	A	Mathematics	Complex numbers	Rotation theorem	Easy
11th April Shift1	65	11th	A	Mathematics	Quadratic equation	Newtons theorem	Easy
11th April Shift1	66	12th	A	Mathematics	Applications of Integrals	Area Bounded by two curves	Medium
11th April Shift1	67	11th	A	Mathematics	Trigonometric functions 2	Trigonometric equations	Easy
11th April Shift1	68	11th	A	Mathematics	Conic section 2	Locus	Medium
11th April Shift1	69	11th	A	Mathematics	Set Theory	Implications of sets	Easy
11th April Shift1	70	11th	A	Mathematics	mathematical Reasoning	Conditional statement	Easy
11th April Shift1	71	12th	A	Mathematics	Matrices	Algebra of matrices	Easy
11th April Shift1	72	12th	A	Mathematics	Vector	Modulus of vector	Easy
11th April Shift1	73	12th	A	Mathematics	differential equation	differential equation by inspection form	Medium
11th April Shift1	74	11th	B	Mathematics	Permutation and combinations	Dearrangement	Easy

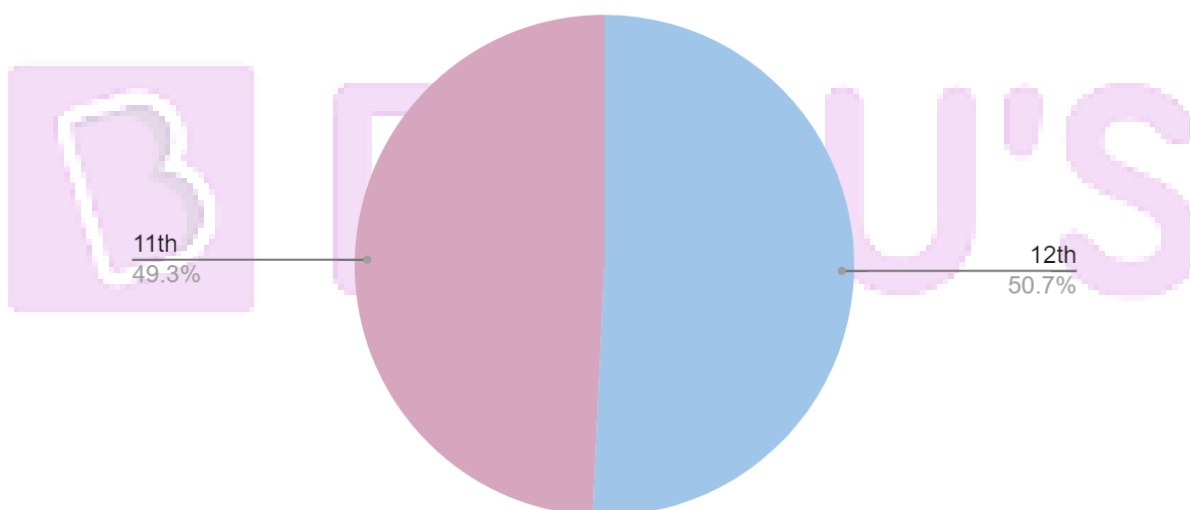
11th April Shift1	75	11th	B	Mathematics	Mathematical reasoning	Implications	Medium
11th April Shift1	76	11th	B	Mathematics	Binomial Theorem	General terms	Easy
11th April Shift1	77	12th	B	Mathematics	3 D geometry	Image in a plane	Easy
11th April Shift1	78	11th	B	Mathematics	Binomial Theorem	Binomial coefficient	Easy
11th April Shift1	79	11th	B	Mathematics	Statistics	Variance	Difficult
11th April Shift1	80	11th	B	Mathematics	Sequence and Series	Arithmetic geometric progression	Medium
11th April Shift1	81	12th	B	Mathematics	Relations and functions	Domain	Difficult

Class Wise Distribution Level Analysis

As per our expert faculties, the questions from the **Class 11th 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	14	56
Chemistry	9	36	12	48
Mathematics	13	52	8	32
Grand Total	33	132	34	136

Class Wise Distribution Analysis



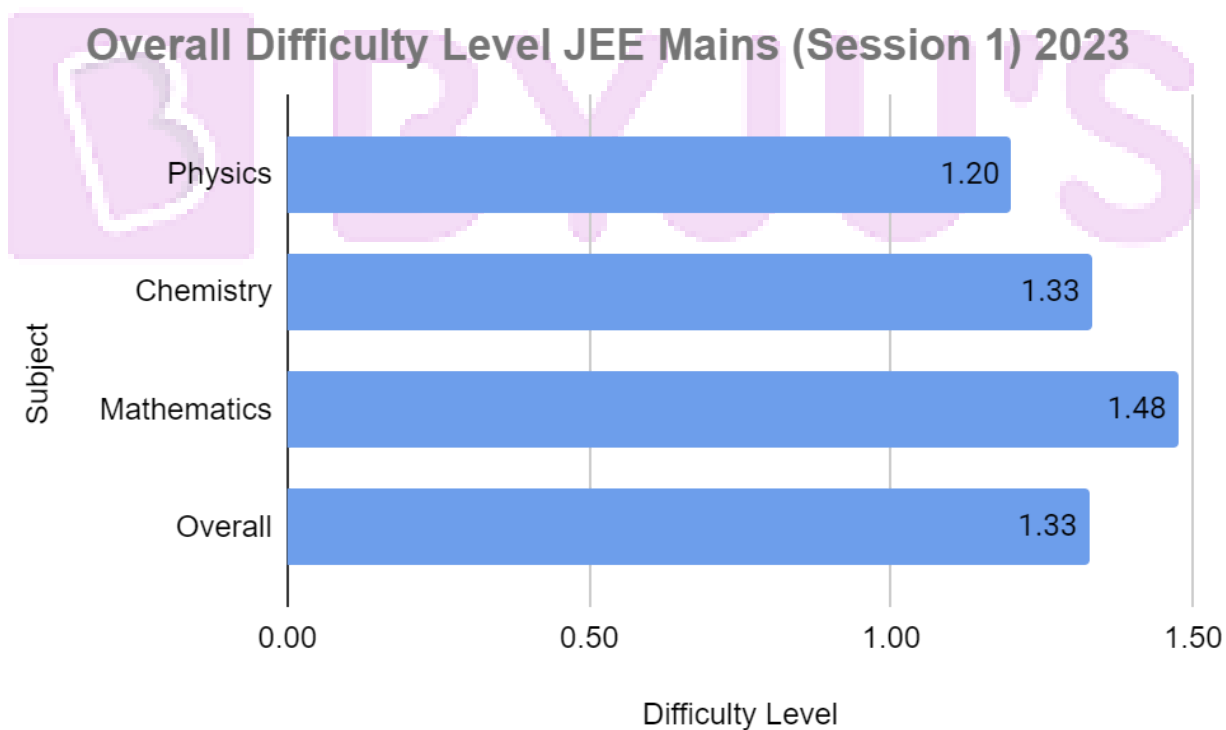
- In Physics, majorly questions were from the Class 12th syllabus.
- In Chemistry, majorly questions were from the Class 12th syllabus.
- In Mathematics, majorly questions were from the Class 11th syllabus.
- Overall the questions had an approximately equal weightage from Class 11th & Class 12th syllabus.

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

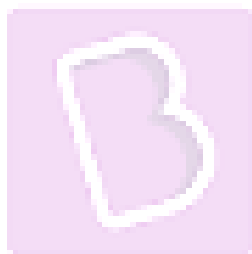
Subject	Difficulty Level
Physics	1.20
Chemistry	1.33
Mathematics	1.48
Overall	1.33



Conclusion

The overall difficulty of **JEE Main (Session 2) 11th April 2023 - Shift 2** 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.



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