

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

11th April 2023 Shift 2 (3 pm - 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.**

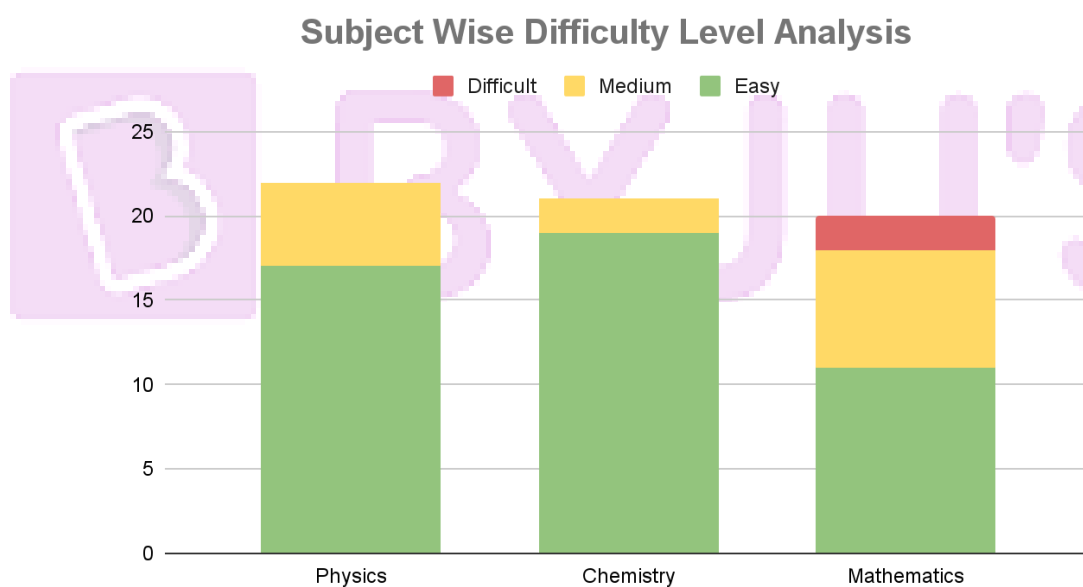
JEE Main Exam Pattern 2023: Paper 1 (B.E/B.Tech)

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 **63 questions out of 90** i.e., **22** questions in Physics, **21** 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	5	20	0	0	22	88
Chemistry	19	76	2	8	0	0	21	84
Mathematics	11	44	7	28	2	8	20	80
Grand Total	47	188	14	56	2	8	63	252



- 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 Shift 2	1	11th	A	Physics	Units & Measurement	Dimensional Analysis	Medium
11th April/ Shift 2	2	11th	A	Physics	Thermodynamics	Isothermal Processes	Easy
11th April/ Shift 2	3	11th	A	Physics	Motion In A Plane	Projectile	Easy
11th April/ Shift 2	4	12th	A	Physics	Electrostatic Potential & Capacitance	Potential Due To A Nonconducting Sphere	Easy
11th April/ Shift 2	5	12th	A	Physics	Motion In A Plane	Vector Addition	Easy
11th April/ Shift 2	6	12th	A	Physics	Solids & Semiconductor Devices	Logic Gate	Easy
11th April/ Shift 2	7	12th	A	Physics	Current Electricity	Electrical Circuits	Medium
11th April/ Shift 2	8	12th	A	Physics	Nuclei	Nuclear Fission	Easy
11th April/ Shift 2	9	12th	A	Physics	Electromagnetic Waves	Properties Of EM Waves	Easy
11th April/ Shift 2	10	11th	A	Physics	Kinetic Theory Of Gases	Average Speed Of Gas Molecule	Easy
11th April/	11	11th	A	Physics	Moving Charges & Magnetism	Motion Of Charges In	Easy

Shift 2						Magnetic Field	
11th April/ Shift 2	12	11th	A	Physics	Mechanical Properties Of Solids	Terminal Velocity	Medium
11th April/ Shift 2	13	12th	A	Physics	Electrostatic Potential & Capacitance	Electric Flux and Capacitance	Easy
11th April/ Shift 2	14	11th	A	Physics	Gravitation	Escape Speed	Medium
11th April/ Shift 2	15	12th	A	Physics	Electromagnetic Induction	Eddy Current	Easy
11th April/ Shift 2	16	11th	A	Physics	Waves	Doppler's Effect	Easy
11th April/ Shift 2	17	12th	A	Physics	Electromagnetic Induction	Motional EMF	Easy
11th April/ Shift 2	18	12th	B	Physics	Atom	Hydrogen and Hydrogen Like Atoms	Easy
11th April/ Shift 2	19	11th	B	Physics	System Of Particles & Rotational Motion	Rotational Kinetic Energy	Easy
11th April/ Shift 2	20	11th	B	Physics	Work Energy & Power	Power	Medium
11th April/ Shift 2	21	12th	B	Physics	Ray Optics & Optical Instruments	Reflection from Plane Mirror	Easy
11th April/ Shift 2	22	12th	B	Physics	Dual Nature Of Matter & Radiation	de Briglie Hypothesis	Easy

Chemistry

11th April/ Shift 2	31	11th	A	Chemistry	s block elements	Physical properties of s block elements	Easy
11th April/ Shift 2	32	11th	A	Chemistry	Chemical Bonding	VSEPR Theory	Easy
11th April/ Shift 2	33	12th	A	Chemistry	Metallurgy	Concentration of sulphide ores	Easy
11th April/ Shift 2	34	12th	A	Chemistry	Biomolecules	Benedict test	Easy
11th April/ Shift 2	35	12th	A	Chemistry	Coordination Chemistry	VSEPR Theory	Easy
11th April/ Shift 2	36	12th	A	Chemistry	Polymers	Condensation polymers	Easy
11th April/ Shift 2	37	12th	A	Chemistry	Coordination Chemistry	Crystal field Theory	Easy
11th April/ Shift 2	38	12th	A	Chemistry	Chemical Kinetics	Rate Law	Easy
11th April/ Shift 2	39	12th	A	Chemistry	Amines	Chemical reactions	Medium
11th April/ Shift 2	40	12th	A	Chemistry	Haloalkanes and haloalkanes	Polyhalides	Easy
11th April/ Shift 2	41	11th	A	Chemistry	Some basic concept of chemistry	Concentration terms	Easy
11th April/ Shift 2	42	12th	A	Chemistry	Aldehyde ketones and carboxylic acid	Wolff kishner reaction	Easy

11th April/ Shift 2	43	12th	A	Chemistry	Solution	Relative lowering in vapour pressure	Easy
11th April/ Shift 2	44	12th	A	Chemistry	Haloalkanes and haloalkanes	Chemical reactions	Easy
11th April/ Shift 2	45	11th	A	Chemistry	Hydrogen	Hydrides	Easy
11th April/ Shift 2	46	12th	A	Chemistry	States of matter	Kinetic Theory of Gases	Easy
11th April/ Shift 2	47	12th	A	Chemistry	Biomolecules	Amino acids	Easy
11th April/ Shift 2	48	11th	B	Chemistry	Thermodynamics	Extensive and intensive properties	Easy
11th April/ Shift 2	49	11th	B	Chemistry	Haloalkanes and haloalkanes	Isomerism	Medium
11th April/ Shift 2	50	11th	B	Chemistry	Some basic concept of chemistry	Stoichiometry	Easy
11th April/ Shift 2	51	12th	B	Chemistry	P block elements	Halides of Phosphorus	Easy

Mathematics

11th April/ Shift 2	61	11th	A	Mathematics	Permutations and combination	Permutations	Easy
11th April/ Shift 2	62	12th	A	Mathematics	Determinants	Application of Determinants	Easy

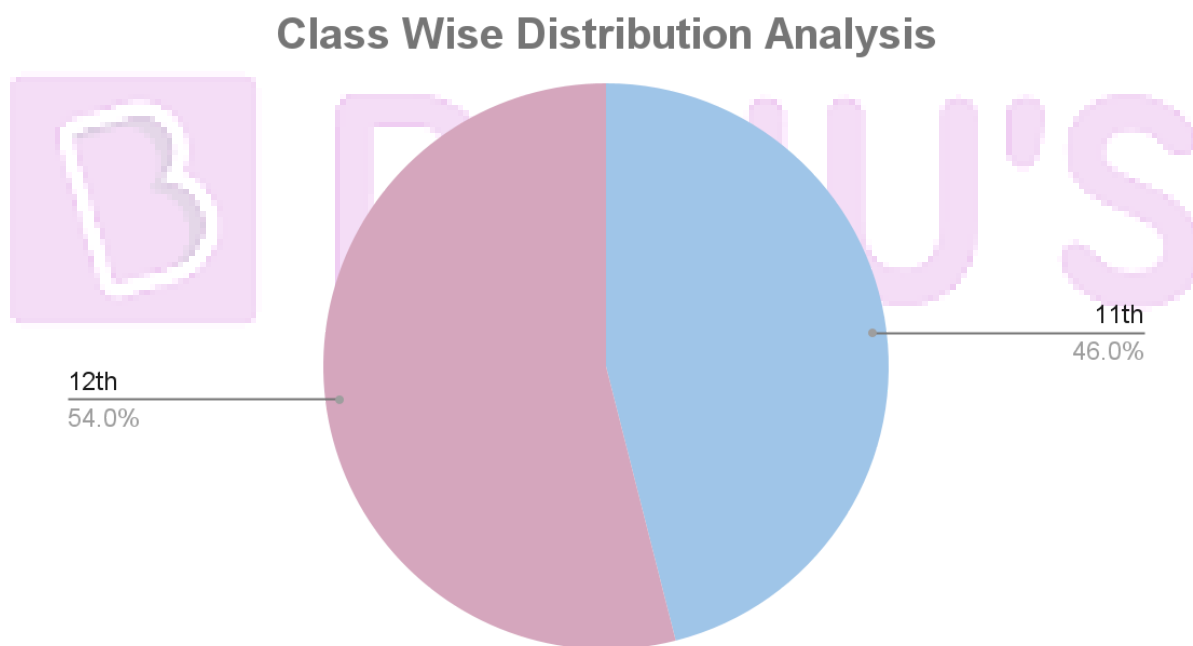
11th April/ Shift 2	63	12th	A	Mathematics	Differential equation	Linear differential equation	Medium
11th April/ Shift 2	64	11th	A	Mathematics	Relation and function	Domain of function	Easy
11th April/ Shift 2	65	11th	A	Mathematics	Statistics	Mean deviation about mean	Medium
11th April/ Shift 2	66	11th	A	Mathematics	Sequence and series	AM, GM inequality	Easy
11th April/ Shift 2	67	11th	A	Mathematics	Binomial Theorem	General terms	Easy
11th April/ Shift 2	68	11th	A	Mathematics	Ellipse	Equation of ellipse	Medium
11th April/ Shift 2	69	12th	A	Mathematics	Definite Integral	Kings property	Difficult
11th April/ Shift 2	70	11th	A	Mathematics	Binomial Theorem	Binomial coefficient	Easy
11th April/ Shift 2	71	11th	A	Mathematics	mathematical reasoning	Conditional statement	Easy
11th April/ Shift 2	72	12th	A	Mathematics	Vector Algebra	Coplanarity	Difficult

11th April/ Shift 2	73	12th	A	Mathematics	Definite Integral	Properties of definite integrals	Medium
11th April/ Shift 2	74	12th	A	Mathematics	Applications of integrals	Area Bounded by two curves	Medium
11th April/ Shift 2	75	12th	A	Mathematics	3 D geometry Plane	Plane	Medium
11th April/ Shift 2	76	11th	A	Mathematics	Functions	Composition of Function	Medium
11th April/ Shift 2	77	11th	B	Mathematics	Quadratic equation	Transformation of equation	Easy
11th April/ Shift 2	78	11th	B	Mathematics	Relations and functions	No of functions	Easy
11th April/ Shift 2	79	12th	B	Mathematics	Probability	Addition theorem of probability	Easy
11th April/ Shift 2	80	11th	B	Mathematics	Trigonometric Functions 2	Height and distance	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	10	40	12	48
Chemistry	7	28	14	56
Mathematics	12	48	8	32
Grand Total	29	116	34	136



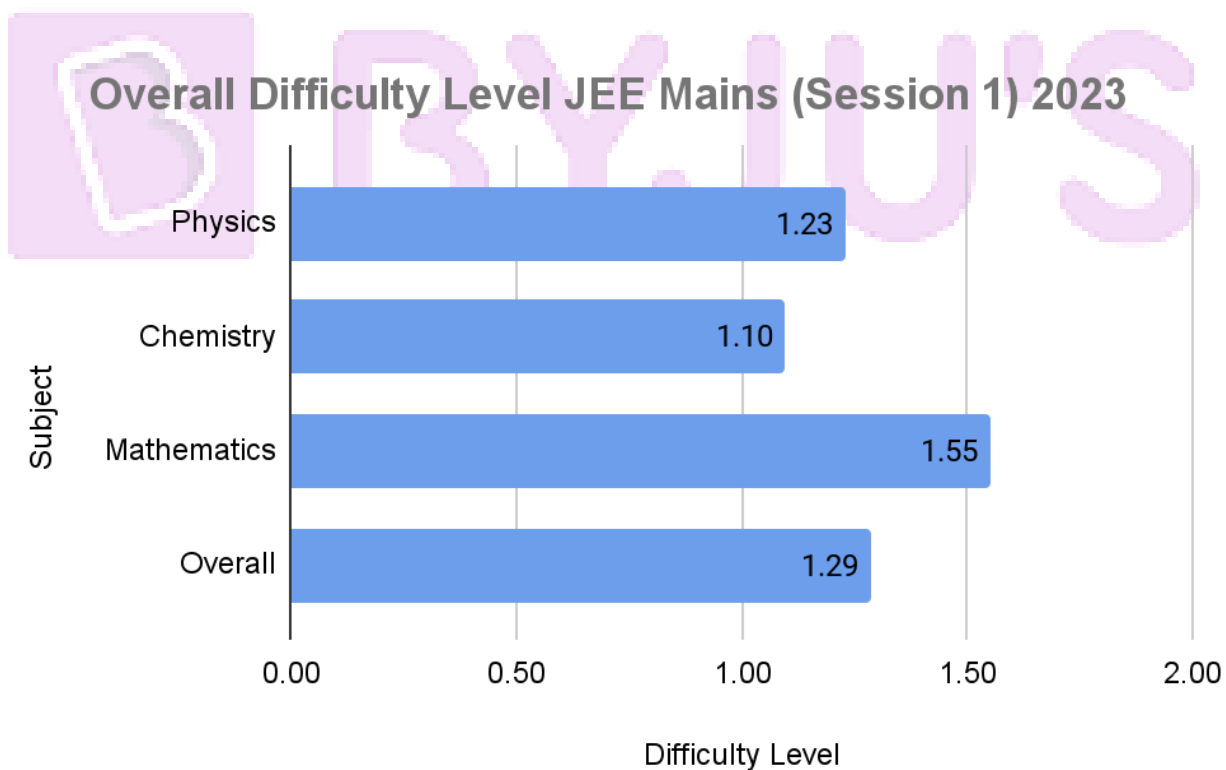
- In Physics, majorly questions were from the Class 12th syllabus.
- In Chemistry, majorly questions were from the Class 12th syllabus.
- In Mathematics, majorly questions were from the Class 11th syllabus.
- Overall the questions from Class 12th syllabus dominated the paper.

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

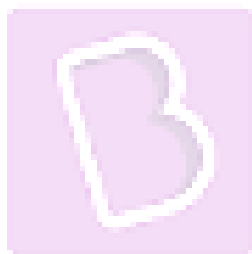
Subject	Difficulty Level
Physics	1.23
Chemistry	1.10
Mathematics	1.55
Overall	1.29



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 > Physics > Chemistry.



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