A Detailed Analysis of JEE Main (Session 1) 2023

24th January, 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

JEE Main 2023 (B.E./B.Tech) exam is being conducted entirely in the computer-based mode by the National Testing Agency (NTA). JEE Main Exam 2023 (B.E./B.Tech.) will be held on January 24, 25, 29, 30 , 31 and February 1, 2023. The Paper will be conducted in two shifts i.e, First Shift from 9:00am to 12:00 pm & Second Shift from 3:00pm to 6:00 pm daily.

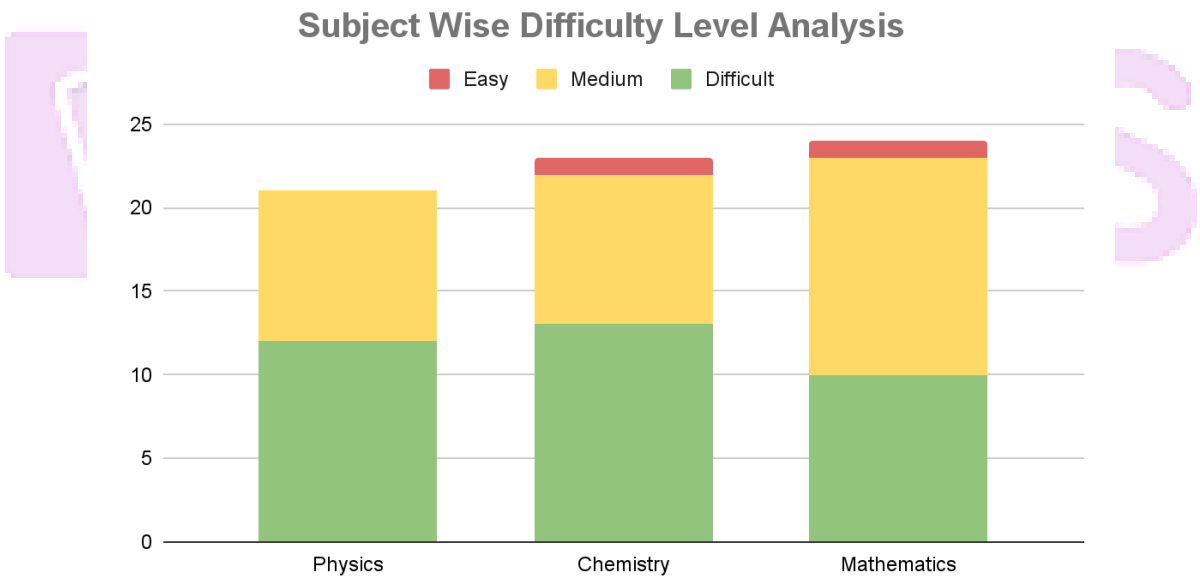
JEE Main Exam Pattern 2023: Paper 1 (B.E/B.Tech)

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	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. **Total: 75 Questions (25 questions in each subject)**
JEE Mains Total Marks	**300 Marks**
JEE Main Marking Scheme	**MCQs**: Four marks will be awarded for each correct answer and there will be a negative marking of one mark on each wrong answer. **Questions with numerical value answers:** Candidates will be given four marks for each correct answer and there will be a negative marking of 1 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 questions** i.e, **21** questions in Physics, **23** questions in Chemistry and **24** 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	12	48	9	36	0	0	21	84
Chemistry	13	52	9	36	1	4	23	92
Mathematics	10	40	13	52	1	4	24	96
Grand Total	**35**	**140**	**31**	**124**	**2**	**8**	**68**	**272**



Question Wise Distribution Analysis

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

Physics

Question No	Class	Section	Subject	Chapter Name	Topic Name	Difficulty Level
1	12th	A	Physics	Solids & Semiconductor Devices	Logic Gates	Easy
2	12th	A	Physics	Electromagnetic Induction	Motional Emf	Medium
3	11th	A	Physics	Kinetic Theory Of Gases	Adiabatic Exponent	Medium
4	12th	A	Physics	Moving Charges And Magnetism	Magnetic Force	Medium
5	11th	A	Physics	Mechanical Properties Of Solids	Young's Modulus	Easy
6	11th	A	Physics	Motion In A Straight Line	velocity Time Graph	Medium
7	12th	A	Physics	Current Electricity	Resistance	Easy
8	11th	A	Physics	Gravitation	Variation in acceleration due to gravity	Easy
9	12th	A	Physics	Electrostatic Potential & Capacitance	Potential	Medium
10	12th	A	Physics	Electromagnetic Waves	Relation between E and B	Easy
11	12th	A	Physics	Current Electricity	Electric Circuit	Easy
12	12th	A	Physics	Moving Charges And Magnetism	Solenoid	Easy
13	11th	B	Physics	Work Energy & Power	Dot Product	Easy
14	12th	A	Physics	Ray Optics & Optical Instruments	Chromatic Aberrations	Easy
15	11th	A	Physics	Gravitation	Variation in acceleration due to gravity	Easy
16	12th	B	Physics	Electromagnetic Induction	LR Circuit	Medium

17	12th	B	Physics	Ray Optics & Optical Instruments	Lens Maker Formula	Medium
18	12th	B	Physics	Atoms	Bohr Model	Medium
19	11th	B	Physics	Motion In A Straight Line	velocity Time Graph	Easy
20	11th	B	Physics	Work Energy & Power	Power	Medium
21	11th	B	Physics	Gravitation	Kepler's Laws	Easy

Chemistry

22	12th	A	Chemistry	Metallurgy	Hydro-metallurgy	Easy
23	11th	A	Chemistry	Atomic structure	de-Broglie wavelength	Medium
24	12th	A	Chemistry	Chemical bonding	Relationship between half-life and concentration	Medium
25	12th	A	Chemistry	Coordination compounds	Valence Bond Theory/ Crystal field Theory	Easy
26	12th	A	Chemistry	Alcohols,phenols and ether	Oxymercuration Demercuration	Medium
27	11th	A	Chemistry	States of matter	Gas laws	Easy
28	12th	A	Chemistry	Biomolecules	Proteins	Easy
29	12th	A	Chemistry	Chemistry in everyday life	Action of drugs	Medium
30	12th	A	Chemistry	Electrochemistry	Conductometric Titration	Difficult
31	11th	A	Chemistry	S block elements	Chemical properties	Easy
32	11th	A	Chemistry	Redox reactions	Oxidising and reducing agent	Easy
33	12th	A	Chemistry	Haloalkanes and Haloarenes	Photo Halogenation of alkanes	Medium
34	12th	A	Chemistry	d and f-block elements	Lanthanide	Easy
35	11th	A	Chemistry	Periodic classification of the elements	Electronic configuration	Medium
36	12th	A	Chemistry	Surface Chemistry	Adsorption	Easy

37	11th	B	Chemistry	Equilibrium	pH	Medium
38	12th	B	Chemistry	P block-II	Oxoacids of Sulphur	Easy
39	11th	B	Chemistry	Some Basic Concepts of chemistry	Concentration terms	Easy
40	11th	B	Chemistry	Atomic structure	Plank Theory	Easy
41	11th	B	Chemistry	Thermodynamics	Poisson's ratio	Easy
42	11th	B	Chemistry	Atomic structure	Electronic configuration	Easy
43	11th	B	Chemistry	Thermodynamics	Work	Medium
44	11th	B	Chemistry	Chemical Bonding	Molecular Orbital Theory	Medium

Mathematics

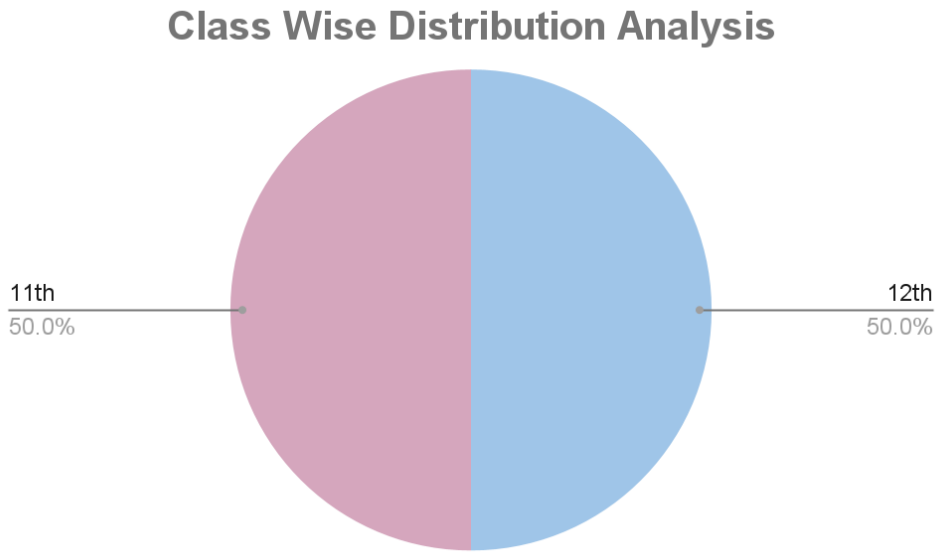
45	12th	A	Mathematics	Definite Integration	Basic Definite Integration	Easy
46	11th	A	Mathematics	Complex Number	DeMoivre's Theorem	Easy
47	12th	A	Mathematics	Vector Algebra	Scalar Product	Easy
48	11th	A	Mathematics	Binomial Theorem	Coefficient of term	Medium
49	11th	A	Mathematics	Sets & Relation	Equivalence Relation	Medium
50	12th	A	Mathematics	Probability	Bayes Theorem	Medium
51	11th	A	Mathematics	Permutation & Combination	Permutation	Easy
52	12th	A	Mathematics	Matrices & Determinants	Basic Algebra of Matrices	Easy
53	12th	A	Mathematics	Three Dimensional Geometry	Skew Lines	Easy
54	11th	A	Mathematics	Mathematical Reasoning	Equivalent Statement	Easy
55	11th	A	Mathematics	Binomial Theorem	Bino-Bino Series	Medium
56	12th	A	Mathematics	Matrices & Determinants	Adjoint Properties	Medium
57	11th	A	Mathematics	Limits & Derivative	Limits	Medium

58	11th	A	Mathematics	Conic Section-1	Circles	Medium
59	12th	A	Mathematics	Continuity & Differentiability	Higher Order Differentiation	Medium
60	11th	A	Mathematics	Sequence & Series	Special Series	Easy
61	11th	A	Mathematics	Relation & function	Function	Easy
62	12th	A	Mathematics	Continuity & Differentiability	Functional Equation	Medium
63	12th	A	Mathematics	Matrices & Determinants	System of Equations	Medium
64	12th	A	Mathematics	Differential Equation	Homogeneous D. E	Medium
65	12th	B	Mathematics	Application Of Integral	Area between two curves	Easy
66	11th	B	Mathematics	Statistics	Variance	Medium
67	11th	B	Mathematics	Trigonometry	Trigonometric Equation	Medium
68	11th	B	Mathematics	Coordinates	Centroid of triangle	Medium

Class Wise Distribution Level Analysis

As per our expert faculties the questions from **Class 12th syllabus and Class 11th syllabus had an equal weightage.**. Below is the Class wise question distribution table -

Subject	11th		12th	
	No. of Questions	**Total Marks**	**No. of Questions**	**Total Marks**
Physics	9	36	12	48
Chemistry	12	48	11	44
Mathematics	13	52	11	44
Grand Total	**34**	**136**	**34**	**136**

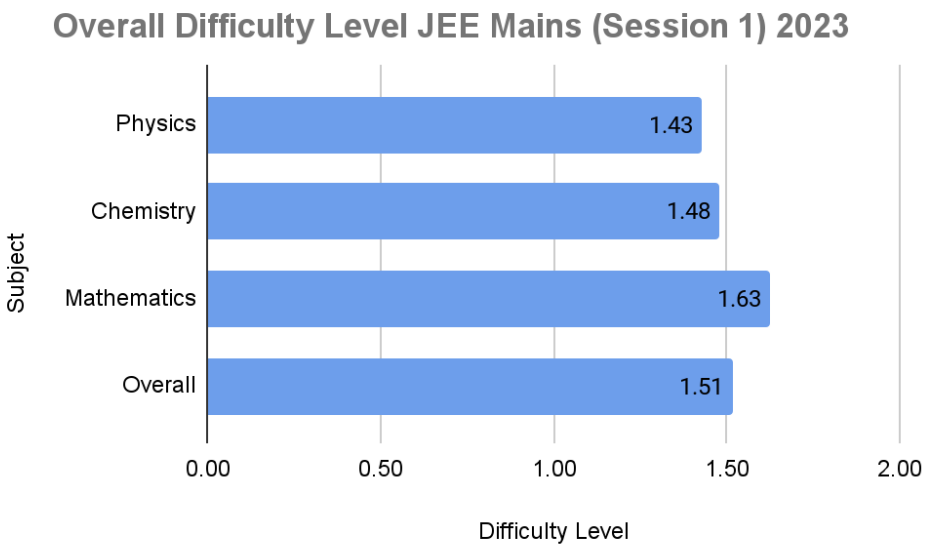


Overall Difficulty Level Analysis

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	1.48
Mathematics	1.63
Overall	**1.51**



Conclusion

The Overall Difficulty rating for **JEE Mains Session 1 (Shift 2) 2023** was **1.63** which was considered as moderately difficult. Overall Mathematics was the most difficult subject to attempt. The order of difficulty in different subjects as assessed by a large section of aspirants is Mathematics > Chemistry > Physics.