



# JEE (ADVANCED)

2023

## DETAIL PAPER ANALYSIS

(By Resonance)

 REGISTERED & CORPORATE OFFICE (CIN: U80302RJ2007PLC024029)

CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Rajasthan) - 324005

 0744-2777777 |  73400 10345 |  contact@resonance.ac.in |  www.resonance.ac.in

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**CG Tower Campus, Kota**


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**Excellence in Career Education**



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- Integrity, transparency and openness in all our actions
- Innovation and pursuit of excellence in career education
- Address the needs of students through career oriented initiatives
- Strive to continuously improve our processes and quality of deliverables

**R.K. Verma (RKV Sir)**  
 B.Tech. (IIT-Madras, 1994)  
 Founder | Managing Director  
 Head (Academics) | Sr. Faculty (Physics)

**About Resonance:**  
 Place : Kota (Rajasthan)  
 Established on: 11<sup>th</sup> April, 2001

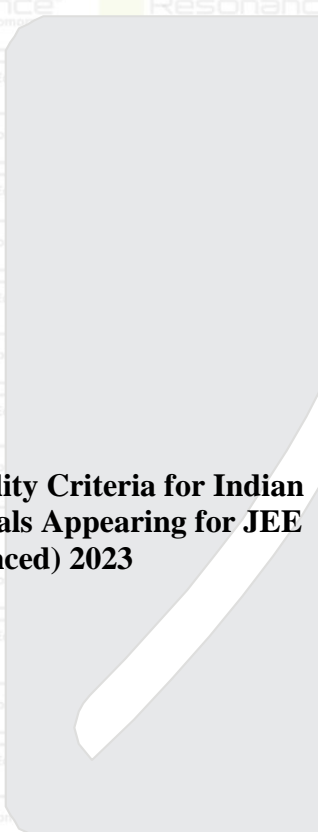
| S.No. | Academic Division                                    | Classes                  | Target Examinations   |
|-------|--|--------------------------|---|
| 1.    | Pre-Engineering Division: JEE (Advanced)             | IX, X, XI, XII & XII+    | JEE (Advanced)   JEE (Main)   Olympiads   |
| 2.    | Pre-Engineering Division: JEE (Main)                 | IX, X, XI, XII & XII+    | JEE (Main)   Other Engineering Entrance Exams   |
| 3.    | Pre-Medical Division                                 | IX, X, XI, XII & XII+    | NEET (UG)   Olympiads   |
| 4.    | Pre-foundation Career Care Programme Division (PCCP) | V, VI, VII, VIII, IX & X | School & Board Exams   NTSE   Olympiads   STSE  |
| 5.    | Commerce & Law Programme Division (CLPD)             | XI, XII & XII+           | CA   CS   CLAT   Board   CUET (UG)   UG & PG  |
| 6.    | Pre-university & School Preparatory Division (PSPD)  | XI, XII & XII+           | Board Exams   CUET-UG   IPMAT   JIPMAT   BITSAT   NDA-NA   UCEED<br>STSE   College Entrance Exam (UG) & Scholarship Exams |
| 7.    | Resonance Multiple Examination Division (ResoMEx)    | XII+   UG & PG           | SSC   BANKS   RAILWAYS   Other Govt. & Private Recruitment Exams  |
| 8.    | Distance Learning Programme Division (DLPD)          | V to XII & XII+          | JEE (Main)   JEE (Advanced)   NEET (UG)   OLYMPIADS   PRE-FOUNDATION   OTHERS   |
| 9.    | EdTech Division                                      | V to XII & XII+          | JEE (Main)   JEE (Advanced)   NEET (UG)   PRE-FOUNDATION  |
| 10.   | Resonance International Studies Division (Reso-ISD)  | VI to XII & XII+         | JEE (Main)   JEE (Advanced)   NEET (UG)   OLYMPIADS   PRE-FOUNDATION<br>Upcoming: SAT   IELTS   GRE   PTE                 |

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### About the Exam

| SN# | Particulars  | Information   |
|-----|--|---|
| 1   | <b>Product Type</b>  | Resonance - JEE (Advanced) 2023 Detail Paper Analysis   |
| 2   | <b>Target Exam</b>   | Joint Entrance Examination, JEE (Advanced)  |
| 3   | <b>Target Year</b>   | <b>2023</b>   |
| 4   | <b>Exam Conducting Body</b>  | Organized annually by one of the 7 Zonal IITs :<br>4.1 IIT Roorkee      4.2 IIT Kharagpur<br>4.3 IIT Delhi        4.4 IIT Kanpur<br>4.5 IIT Bombay     4.6 IIT Madras<br><b>4.7 IIT Guwahati</b><br>For latest updates, log on to Website : <a href="https://jeeadv.ac.in">https://jeeadv.ac.in</a> |
| 5   | <b>Exam Date &amp; Day</b>   | 04 <sup>th</sup> June, 2023 (Sunday)  |
| 6   | <b>Exam Timings</b>  | Paper-1: 09:00 IST to 12:00 IST<br>Paper-2: 14:30 IST to 17:30 IST<br><b>Appearing in both the papers is compulsory</b>   |
| 7   | <b>Total Hrs.</b>  | Paper-1: 3 Hrs. (180 Minutes)<br>Paper-2: 3 Hrs. (180 Minutes)<br>Total -: 6 Hrs (360 Minutes)  |
| 8   | <b>Subject (in each Paper)</b>   | Physics, Chemistry and Mathematics  |
| 9   | <b>Mode of Examination</b>   | Computer Based Test (CBT)   |
| 10  | <b>Copy of candidate responses to be available on the JEE (Advanced) 2023 website: <a href="https://jeeadv.ac.in">https://jeeadv.ac.in</a></b> | June 09, 2023 (Friday, 17:00 IST)   |
| 11  | <b>Online display of provisional answer keys on <a href="https://jeeadv.ac.in">https://jeeadv.ac.in</a></b>                                    | June 11, 2023 (Sunday, 10:00 IST)   |
| 12  | <b>Receiving feedback from candidates on provisional answer keys through candidate portal</b>  | Receiving feedback from candidates on provisional answer keys through candidate portal  |
| 13  | <b>Online display of final answer keys on <a href="https://jeeadv.ac.in">https://jeeadv.ac.in</a></b>  | June 18, 2023 (Sunday, 10:00 IST)   |
| 14  | <b>Results will be declared on</b>   | June 18, 2023 (Sunday)  |

| <p>15. <b>Eligibility Criteria for Indian Nationals Appearing for JEE (Advanced) 2023</b></p> |  | <p>All the candidates <b>must simultaneously fulfil each and every one of the following five criteria</b> to appear for JEE (Advanced) 2023.</p> <p><b>Criterion 1</b> – Performance in JEE (Main) 2023: Candidates should be among the top 2,50,000 successful candidates (including all categories) in B.E./B.Tech. paper of JEE (Main) 2023. The percentages of various categories of candidates to be shortlisted are: 10% for GEN-EWS, 27% for OBC-NCL, 15% for SC, 7.5% for ST, and the remaining 40.5% is OPEN for all. Within each of these five categories, 5% horizontal reservation is available for PwD candidates. The following table shows the order to be followed while choosing the top 2,50,000 candidates in various categories based on the performance in B.E./B.Tech. paper of JEE (Main) 2023.</p> <p><b>Category-wise distribution of top 2,50,000* candidates (Criterion 1)</b></p> <table border="1" data-bbox="683 1070 1439 1599"> <thead> <tr> <th>SN#</th> <th>Category</th> <th>Number of candidates</th> <th>of “Top”</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OPEN</td> <td>96187</td> <td rowspan="2">101250</td> </tr> <tr> <td>2</td> <td>OPEN-PwD</td> <td>5063</td> </tr> <tr> <td>3</td> <td>GEN-EWS</td> <td>23750</td> <td rowspan="2">25000</td> </tr> <tr> <td>4</td> <td>GEN-EWS-PwD</td> <td>1250</td> </tr> <tr> <td>5</td> <td>OBC-NCL</td> <td>64125</td> <td rowspan="2">67500</td> </tr> <tr> <td>6</td> <td>OBC-NCL-PwD</td> <td>3375</td> </tr> <tr> <td>7</td> <td>SC</td> <td>35625</td> <td rowspan="2">37500</td> </tr> <tr> <td>8</td> <td>SC-PwD</td> <td>1875</td> </tr> <tr> <td>9</td> <td>ST</td> <td>17812</td> <td rowspan="2">18750</td> </tr> <tr> <td>10</td> <td>ST-PwD</td> <td>938</td> </tr> <tr> <td></td> <td><b>Total</b></td> <td></td> <td><b>2,50,000</b></td> </tr> </tbody> </table> <p><i>*The total number of candidates may be slightly greater than 2,50,000 in the presence of “tied” ranks / scores in any category.</i></p> <p><b>Criterion 2</b> – Age limit: Candidates should have been born on or after October 1, 1998. Five years age relaxation is given to SC, ST, and PwD candidates, i.e. these candidates should have been born on or after October 1, 1993.</p> | SN#             | Category | Number of candidates | of “Top” | 1 | OPEN | 96187 | 101250 | 2 | OPEN-PwD | 5063 | 3 | GEN-EWS | 23750 | 25000 | 4 | GEN-EWS-PwD | 1250 | 5 | OBC-NCL | 64125 | 67500 | 6 | OBC-NCL-PwD | 3375 | 7 | SC | 35625 | 37500 | 8 | SC-PwD | 1875 | 9 | ST | 17812 | 18750 | 10 | ST-PwD | 938 |  | <b>Total</b> |  | <b>2,50,000</b> |
|---|--|---|-----------------|----------|----------------------|----------|---|------|-------|--------|---|----------|------|---|---------|-------|-------|---|-------------|------|---|---------|-------|-------|---|-------------|------|---|----|-------|-------|---|--------|------|---|----|-------|-------|----|--------|-----|--|--------------|--|-----------------|
| SN#   | Category   | Number of candidates  | of “Top”        |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 1   | OPEN   | 96187   | 101250          |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 2   | OPEN-PwD   | 5063  |                 |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 3   | GEN-EWS  | 23750   | 25000           |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 4   | GEN-EWS-PwD  | 1250  |                 |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 5   | OBC-NCL  | 64125   | 67500           |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 6   | OBC-NCL-PwD  | 3375  |                 |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 7   | SC   | 35625   | 37500           |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 8   | SC-PwD   | 1875  |                 |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 9   | ST   | 17812   | 18750           |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
| 10  | ST-PwD   | 938   |                 |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |
|   | <b>Total</b>   |   | <b>2,50,000</b> |          |                      |          |   |      |       |        |   |          |      |   |         |       |       |   |             |      |   |         |       |       |   |             |      |   |    |       |       |   |        |      |   |    |       |       |    |        |     |  |              |  |                 |

**Criterion 3** – Number of attempts: A candidate can attempt JEE (Advanced) maximum of two times in two consecutive years

**Criterion 4** – Appearance in Class XII (or equivalent) examination\*: A candidate should have appeared for the Class XII (or equivalent) examination for the first time in either 2022 or 2023 with Physics, Chemistry, and Mathematics as compulsory subjects. Candidates who had appeared in Class XII (or equivalent) examination for the first time in 2021 or earlier, are NOT eligible to appear in JEE (Advanced) 2023, irrespective of the combination of subjects attempted/offered.

*\* By appearance in Class XII (or equivalent) examination, it is meant that the Board concerned declared the result for that year irrespective of whether or not examination was conducted. It will be considered as an appearance even if the result of a particular candidate got withheld.*

However, if the examination Board of Class XII (or equivalent) declared the results for the academic year 2020-21 on or after October 25, 2021, then the candidates of that Board who appeared for their Class XII (or equivalent) examination in 2021 are also eligible to appear in JEE (Advanced) 2023, provided they meet all the other eligibility criteria. In case the examination Board of Class XII (or equivalent) declared the results for the academic year 2020-21 before October 25, 2021 but the result of a particular candidate was withheld, then the candidate will not be eligible to appear in JEE (Advanced) 2023.

**Criterion 5** – Earlier admission at IITs: A candidate should NOT have been admitted to an IIT irrespective of whether or not the candidate continued in the program OR accepted an IIT seat by reporting “online” / at a “reporting centre” in the past. Candidates whose admission to IITs was cancelled (for whatever reason) after joining any IIT are also NOT eligible to appear for JEE (Advanced) 2023.

Candidates who have been admitted to a preparatory course in any of the IITs for the first time in 2022 can appear in JEE (Advanced) 2023. The candidates who were allocated a seat in an IIT through JoSAA 2022 but (i) did not report “online” / at any “reporting centre” OR, (ii) withdrew before the last round of seat allotment, OR, (iii) had their

|  |  | <p>seat cancelled (for whatever reason) before the last round of seat allotment for IITs, are eligible to appear for JEE (Advanced) 2023. However, in all of the above cases, the candidate is also required to fulfil the conditions mentioned from Criterion 1 to Criterion 4.</p> <p><b>Eligibility criteria for foreign national candidates can be found at</b><br/> <a href="https://jeeadv.ac.in/foreign.html">https://jeeadv.ac.in/foreign.html</a></p>   |                  |  |  |                         |                                    |        |                            |  |        |                      |  |        |  |  |         |  |  |          |
|--|--|--|------------------|--|--|-------------------------|------------------------------------|--------|----------------------------|--|--------|----------------------|--|--------|--|--|---------|--|--|----------|
|  | <p><b>Registration Fee for JEE (Advanced) 2023</b></p> | <p>Candidates who wish to appear for JEE (Advanced) 2023 must pay the registration fee, as mentioned in the following table.</p> <table border="1" data-bbox="683 853 1398 1451"> <thead> <tr> <th colspan="3">Registration Fee</th> </tr> </thead> <tbody> <tr> <td><b>Indian Nationals</b></td> <td>Female Candidates (all categories)</td> <td>₹ 1450</td> </tr> <tr> <td>SC, ST, and PwD Candidates</td> <td></td> <td>₹ 1450</td> </tr> <tr> <td>All Other Candidates</td> <td></td> <td>₹ 2900</td> </tr> <tr> <td><b>Foreign Nationals (including PIO/OCI)</b></td> <td>Candidates Residing in SAARC Countries</td> <td>USD 90#</td> </tr> <tr> <td>Candidates Residing in Non-SAARC Countries</td> <td></td> <td>USD 180#</td> </tr> </tbody> </table> <p># Or equivalent in INR</p> | Registration Fee |  |  | <b>Indian Nationals</b> | Female Candidates (all categories) | ₹ 1450 | SC, ST, and PwD Candidates |  | ₹ 1450 | All Other Candidates |  | ₹ 2900 | <b>Foreign Nationals (including PIO/OCI)</b> | Candidates Residing in SAARC Countries | USD 90# | Candidates Residing in Non-SAARC Countries |  | USD 180# |
| Registration Fee                             |  |  |                  |  |  |                         |                                    |        |                            |  |        |                      |  |        |  |  |         |  |  |          |
| <b>Indian Nationals</b>                      | Female Candidates (all categories)                     | ₹ 1450   |                  |  |  |                         |                                    |        |                            |  |        |                      |  |        |  |  |         |  |  |          |
| SC, ST, and PwD Candidates                   |  | ₹ 1450   |                  |  |  |                         |                                    |        |                            |  |        |                      |  |        |  |  |         |  |  |          |
| All Other Candidates                         |  | ₹ 2900   |                  |  |  |                         |                                    |        |                            |  |        |                      |  |        |  |  |         |  |  |          |
| <b>Foreign Nationals (including PIO/OCI)</b> | Candidates Residing in SAARC Countries                 | USD 90#  |                  |  |  |                         |                                    |        |                            |  |        |                      |  |        |  |  |         |  |  |          |
| Candidates Residing in Non-SAARC Countries   |  | USD 180#   |                  |  |  |                         |                                    |        |                            |  |        |                      |  |        |  |  |         |  |  |          |

### ZONES, NAMES, LOCATIONS, AND ABBREVIATIONS OF THE TWENTY-THREE IITs

| Zone               | Institute                                     | City        | Abbreviation |
|--------------------|---|-------------|--------------|
| East Zone          | Indian Institute of Technology Kharagpur      | Kharagpur   | IITKGP*      |
|                    | Indian Institute of Technology Bhubaneswar    | Bhubaneswar | IITBBS       |
|                    | Indian Institute of Technology (ISM) Dhanbad  | Dhanbad     | IIT(ISM)     |
|                    | Indian Institute of Technology Bhilai         | Bhilai      | IITBH        |
| Central Zone       | Indian Institute of Technology Kanpur         | Kanpur      | IITK*        |
|                    | Indian Institute of Technology (BHU) Varanasi | Varanasi    | IIT(BHU)     |
|                    | Indian Institute of Technology Indore         | Indore      | IITI         |
| North Central Zone | Indian Institute of Technology Delhi          | New Delhi   | IITD*        |
|                    | Indian Institute of Technology Jammu          | Jammu       | IITJMU       |
|                    | Indian Institute of Technology Jodhpur        | Jodhpur     | IITJ         |
| North East Zone    | Indian Institute of Technology Guwahati #     | Guwahati    | IITG*        |
|                    | Indian Institute of Technology Patna          | Patna       | IITP         |
| North Zone         | Indian Institute of Technology Roorkee        | Roorkee     | IITR*        |
|                    | Indian Institute of Technology Mandi          | Mandi       | IITMandi     |
|                    | Indian Institute of Technology Ropar          | Ropar       | IITRPR       |
| South Zone         | Indian Institute of Technology Hyderabad      | Hyderabad   | IITH*        |
|                    | Indian Institute of Technology Madras         | Chennai     | IITM         |
|                    | Indian Institute of Technology Palakkad       | Palakkad    | IITPKD       |
|                    | Indian Institute of Technology Tirupati       | Tirupati    | IITT         |
| West Zone          | Indian Institute of Technology Bombay         | Mumbai      | IITB*        |
|                    | Indian Institute of Technology Dharwad        | Dharwad     | IITDh        |
|                    | Indian Institute of Technology Gandhinagar    | Gandhinagar | IITGN        |
|                    | Indian Institute of Technology Goa            | Goa         | IITGOA       |

\* Zonal Coordinating IITs to conduct JEE (Advanced) 2023 examination.

# Organizing Institute, JEE (Advanced) 2023 examination



### Exam Pattern

The paper pattern was different in comparison to last Years. Each paper had **total of 51 questions**.

In **Paper 1** each subject contains four Sections:

**Section 1** had 3 questions of **ONE OR MORE THAN ONE** worth +4 marks (with partial marking) each and with -2 negative marking.

**Section 2** had 4 questions of **ONLY ONE** Correct type worth +3 marks each and -1 as negative marking.

**Section 3** had 6 questions of **NON-NEGATIVE INTEGER** worth +4 marks each and Zero Marks in all other cases.

**Section 4** had 4 questions of **MATCH LIST SETS** i.e. Match List-I to List-II. List-I had 4 entries (P), (Q), (R) and (S) and List-II has Five entries (1), (2), (3), (4) and (5). **ONLY ONE** of these four options satisfies the condition asked in the Multiple Choice Question Full marks: +3 in case all options are correct, Zero Marks if none of the options are chosen, -1 negative marking.

In **Paper 2** each subject contains four sections:

**Section 1** had 4 questions of **ONLY ONE** Correct type worth +3 marks each and -1 as negative marking.

**Section 2** had 3 questions of **ONE OR MORE THAN ONE** type worth +4 marks (with partial marking) each and with -2 negative marking.

**Section 3** had 6 questions of **NON-NEGATIVE INTEGER** worth +4 marks each and Zero Marks in all other cases.

**Section 4** had 4 questions based on TWO (02) paragraphs and each question is a **NUMERICAL VALUE**. worth +3 marks each and Zero Marks in all other cases. If the numerical value has more than two decimal places, truncate/round-off the value to TWO decimal places

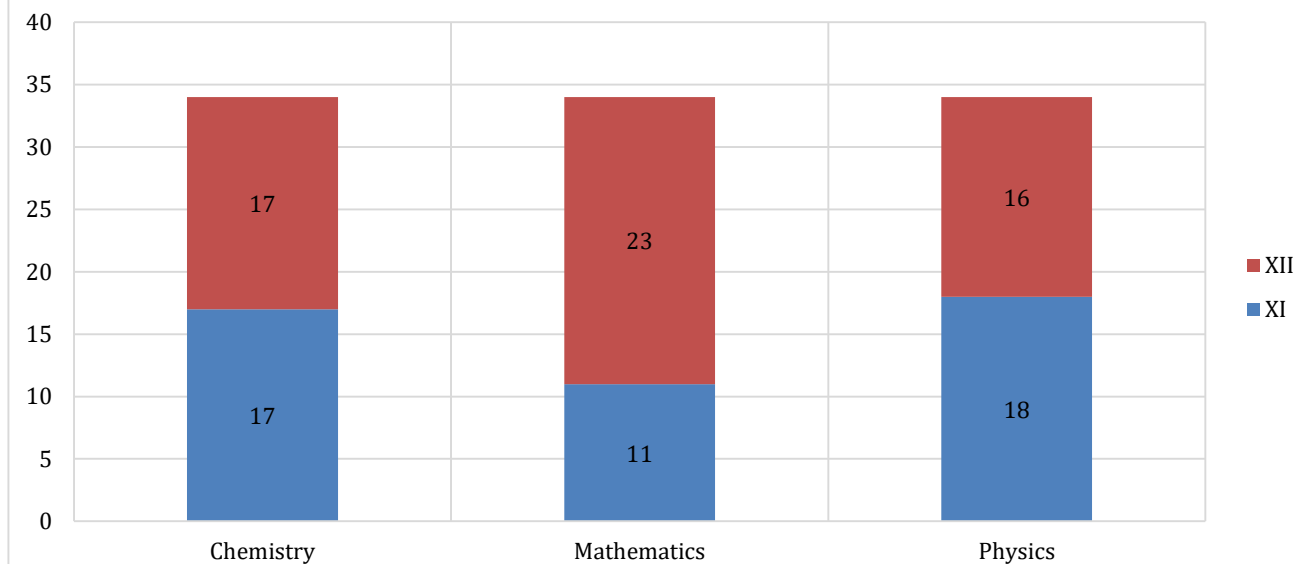
**Each Subject has 17 Questions. The total number of Questions in combined Paper 1 and Paper 2 is 102 Questions.**

**Each Paper was of 180 marks. The total marks of combined Paper 1 and Paper 2 are 360.**

### Overall Questions Distribution (Class wise)

| Subject            | Class 11        |             | Class 12        |             | Total Percentage |            |
|--------------------|-----------------|-------------|-----------------|-------------|------------------|------------|
|                    | No of Questions | Total Marks | No of Questions | Total Marks | Class 11         | Class 12   |
| Chemistry          | 17              | 61          | 17              | 59          | 50%              | 50%        |
| Mathematics        | 11              | 39          | 23              | 81          | 32%              | 68%        |
| Physics            | 18              | 64          | 16              | 56          | 53%              | 47%        |
| <b>Grand Total</b> | <b>46</b>       | <b>164</b>  | <b>56</b>       | <b>196</b>  | <b>45%</b>       | <b>55%</b> |

Class Wise Number of Questions



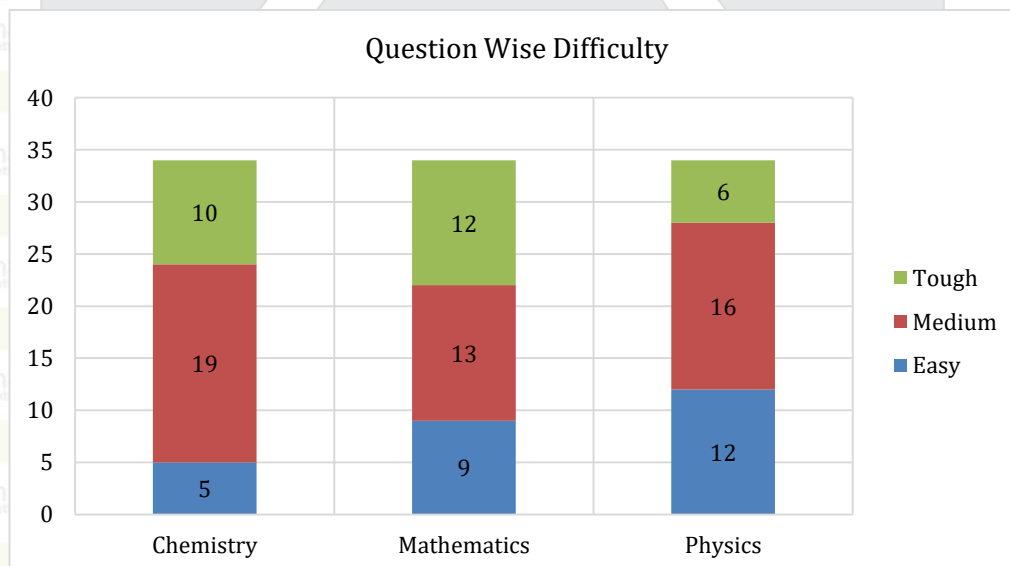
### Overall Difficulty Level Analysis

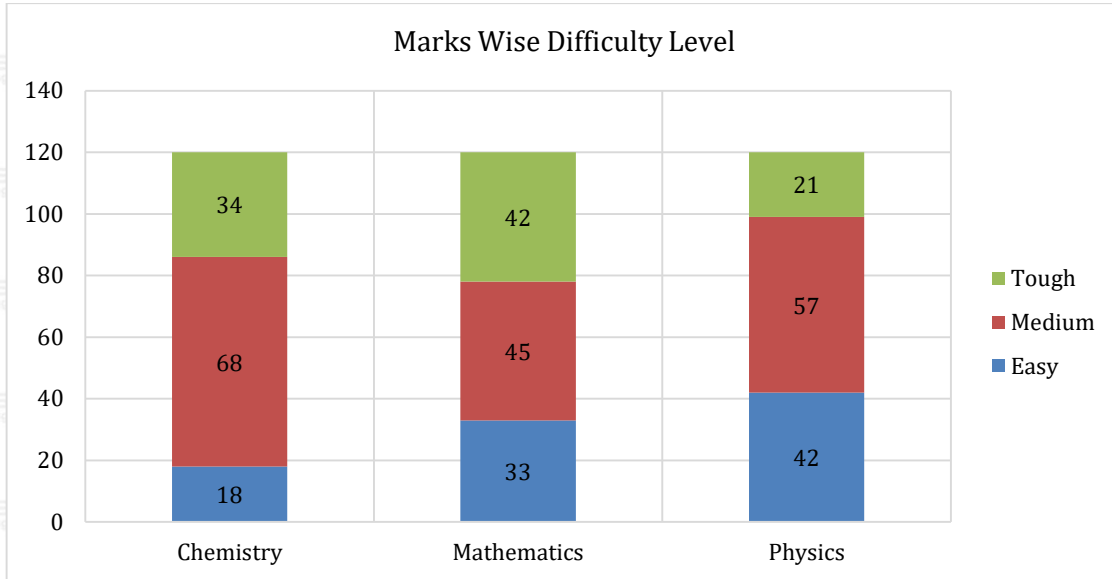
In this analysis, we have rated every question on a scale of 1 to 3. The ratings are done by expert faculty of Resonance. The individual ratings are then averaged to calculate overall difficulty level.

**1: Easy**      **2: Moderate**      **3: Difficult**

Difficulty Level Analysis: Number of Questions

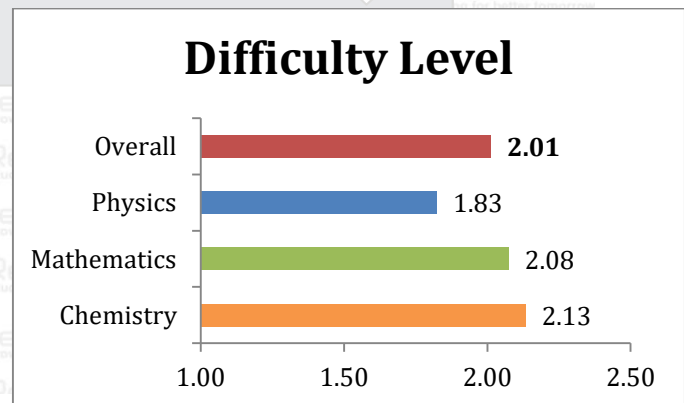
| Subject            | Easy Level      |             | Medium Level    |             | Difficult Level |             |
|--------------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
|                    | No of Questions | Total Marks | No of Questions | Total Marks | No of Questions | Total Marks |
| Chemistry          | 5               | 18          | 19              | 68          | 10              | 34          |
| Mathematics        | 9               | 33          | 13              | 45          | 12              | 42          |
| Physics            | 12              | 42          | 16              | 57          | 6               | 21          |
| <b>Grand Total</b> | <b>26</b>       | <b>93</b>   | <b>48</b>       | <b>170</b>  | <b>28</b>       | <b>97</b>   |





Resonance experts feel that Chemistry and Mathematics paper was on Moderate to Tough as compared to Physics. Out of **360** marks, **93** marks paper can be considered of easy level, **170** marks can be considered of medium difficulty level and **97** marks can be considered to be of difficult level by Resonance Team. Overall, difficulty level of paper seemed to be moderate to difficult.

| Subject        | Difficulty Level |
|----------------|------------------|
| Chemistry      | 2.13             |
| Mathematics    | 2.08             |
| Physics        | 1.83             |
| <b>Overall</b> | <b>2.01</b>      |



### PHYSICS ANALYSIS (CLASS & TOPIC-SUBTOPIC WISE ALLOCATION OF QUESTIONS & MARKS WITH WEIGHTAGE):

| PHYSICS  |                 |             |               |
|--|-----------------|-------------|---------------|
| UNIT & TOPIC NAME  | NO OF QUESTIONS | TOTAL MARKS | (%) WEIGHTAGE |
| <b>Physics</b>   | <b>34</b>       | <b>120</b>  | <b>100%</b>   |
| <b>Class-12</b>  | <b>16</b>       | <b>56</b>   | <b>47%</b>    |
| <b>Mechanics</b>   | 1               | 3           | 3%            |
| Gravitation  | 1               | 3           | 3%            |
| <b>Modern Physics</b>  | 4               | 14          | 12%           |
| Mass Defect & Binding Energy                                       | 1               | 3           | 3%            |
| Photoelectric Effect, de-Broglie wavelength of matter waves        | 2               | 7           | 6%            |
| Radioactivity  | 1               | 4           | 3%            |
| <b>Optics</b>  | 3               | 11          | 9%            |
| Geometrical Optics   | 3               | 11          | 9%            |
| <b>Electricity &amp; Magnetism</b>                                 | 6               | 21          | 18%           |
| Alternating current  | 1               | 3           | 3%            |
| Capacitance  | 2               | 7           | 6%            |
| Electro Magnetic Field   | 1               | 3           | 3%            |
| Electro Magnetic Induction   | 1               | 4           | 3%            |
| Electrostatics   | 1               | 4           | 3%            |
| <b>Unit &amp; Dimensions, Experiment, Measurement &amp; Errors</b> | 1               | 4           | 3%            |
| Error in Measurement   | 1               | 4           | 3%            |
| <b>Electromagnetic waves</b>                                       | 1               | 3           | 3%            |
| Electromagnetic waves  | 1               | 3           | 3%            |
| <b>Class-11</b>  | <b>18</b>       | <b>64</b>   | <b>53%</b>    |
| <b>Mechanics</b>   | 13              | 46          | 38%           |
| Centre of mass   | 2               | 8           | 7%            |
| Rigid Body Dynamics  | 2               | 6           | 5%            |
| Sound Waves  | 2               | 6           | 5%            |
| Fluid Mechanics  | 2               | 6           | 5%            |
| Simple Harmonic motion   | 1               | 4           | 3%            |
| Surface Tension  | 1               | 4           | 3%            |
| Rectilinear Motion & Vectors                                       | 2               | 8           | 7%            |
| String wave  | 1               | 4           | 3%            |
| <b>Thermal Physics</b>   | 4               | 14          | 12%           |
| Kinetic Theory of Gases & Thermodynamics                           | 4               | 14          | 12%           |
| <b>Unit &amp; Dimensions, Experiment, Measurement &amp; Errors</b> | 1               | 4           | 3%            |
| Unit & Dimension   | 1               | 4           | 3%            |

### CHEMISTRY ANALYSIS (CLASS & TOPIC-SUBTOPIC WISE ALLOCATION OF QUESTIONS & MARKS WITH WEIGHTAGE):

| CHEMISTRY                                |                 |             |               |
|--|-----------------|-------------|---------------|
| UNIT & TOPIC NAME                        | NO OF QUESTIONS | TOTAL MARKS | (%) WEIGHTAGE |
| <b>Chemistry</b>                         | <b>34</b>       | <b>120</b>  | <b>100%</b>   |
| <b>Class-12</b>                          | <b>17</b>       | <b>59</b>   | <b>49%</b>    |
| <b>Inorganic Chemistry-II</b>            | <b>4</b>        | <b>13</b>   | <b>11%</b>    |
| Coordination Compounds                   | 2               | 6           | 5%            |
| Isolation of Metals                      | 1               | 4           | 3%            |
| d-Block Elements                         | 1               | 3           | 3%            |
| <b>Organic Chemistry-II</b>              | <b>8</b>        | <b>28</b>   | <b>23%</b>    |
| Biomolecules                             | 1               | 3           | 3%            |
| Phenols                                  | 3               | 10          | 8%            |
| Amines                                   | 1               | 4           | 3%            |
| Alkyl Halides                            | 2               | 8           | 7%            |
| Ethers                                   | 1               | 3           | 3%            |
| <b>Physical Chemistry-II</b>             | <b>5</b>        | <b>18</b>   | <b>15%</b>    |
| Chemical Kinetics                        | 1               | 4           | 3%            |
| Electrochemistry                         | 1               | 3           | 3%            |
| Solid State                              | 1               | 3           | 3%            |
| Surface Chemistry                        | 1               | 4           | 3%            |
| Solutions                                | 1               | 4           | 3%            |
| <b>Class-11</b>                          | <b>17</b>       | <b>61</b>   | <b>51%</b>    |
| <b>Inorganic Chemistry-I</b>             | <b>5</b>        | <b>19</b>   | <b>16%</b>    |
| Chemical Bonding and Molecular Structure | 3               | 12          | 10%           |
| p-Block Elements (Group 13 & 14)         | 2               | 7           | 6%            |
| <b>Organic Chemistry-I</b>               | <b>4</b>        | <b>13</b>   | <b>11%</b>    |
| Benzene                                  | 3               | 10          | 8%            |
| Basic Principles of Organic Chemistry    | 1               | 3           | 3%            |
| <b>Physical Chemistry-I</b>              | <b>8</b>        | <b>29</b>   | <b>24%</b>    |
| Chemical Thermodynamics                  | 3               | 10          | 8%            |
| Chemical and Ionic Equilibrium           | 2               | 7           | 6%            |
| Mole Concept-I                           | 1               | 4           | 3%            |
| States of Matter: Gases and Liquids      | 1               | 4           | 3%            |
| Atomic Structure                         | 1               | 4           | 3%            |

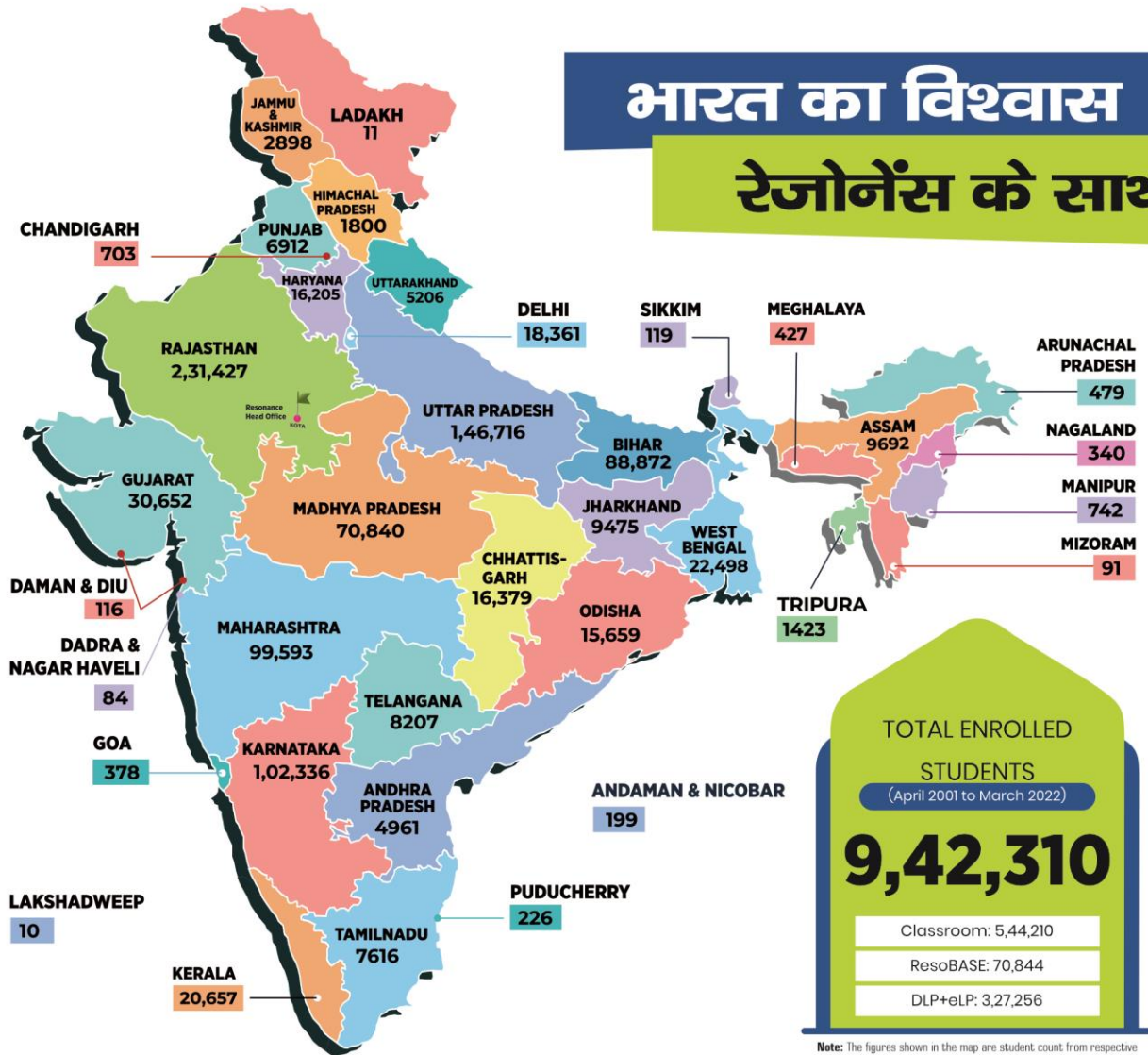
### MATHEMATICS ANALYSIS (CLASS & TOPIC-SUBTOPIC WISE ALLOCATION OF QUESTIONS & MARKS WITH WEIGHTAGE):

| MATHEMATICS                      |                 |             |               |
|----------------------------------|-----------------|-------------|---------------|
| UNIT & TOPIC NAME                | NO OF QUESTIONS | TOTAL MARKS | (%) WEIGHTAGE |
| <b>Mathematics</b>               | <b>34</b>       | <b>120</b>  | <b>100%</b>   |
| <b>Class-12</b>                  | <b>23</b>       | <b>81</b>   | <b>68%</b>    |
| <b>Differential Calculus</b>     | 3               | 10          | 8%            |
| Application of Derivatives       | 1               | 3           | 3%            |
| limit                            | 1               | 3           | 3%            |
| Functions                        | 1               | 4           | 3%            |
| <b>Integral Calculus</b>         | 6               | 23          | 19%           |
| Definite integration             | 5               | 19          | 16%           |
| Differential equation            | 1               | 4           | 3%            |
| <b>Matrix &amp; Determinants</b> | 3               | 10          | 8%            |
| Matrices & Determinants          | 3               | 10          | 8%            |
| <b>Probability*</b>              | 5               | 17          | 14%           |
| Probability                      | 5               | 17          | 14%           |
| <b>Trigonometry</b>              | 2               | 8           | 7%            |
| Inverse Trigonometric function   | 2               | 8           | 7%            |
| <b>Vector and 3D</b>             | 4               | 13          | 11%           |
| Vector                           | 1               | 3           | 3%            |
| Three Dimensional Geometry       | 3               | 10          | 8%            |
| <b>Class-11</b>                  | <b>11</b>       | <b>39</b>   | <b>33%</b>    |
| <b>Complex Numbers</b>           | 3               | 11          | 9%            |
| Complex Numbers                  | 3               | 11          | 9%            |
| <b>Coordinate Geometry</b>       | 3               | 11          | 9%            |
| Circle                           | 1               | 4           | 3%            |
| Ellipse                          | 1               | 4           | 3%            |
| Parabola                         | 1               | 3           | 3%            |
| <b>Trigonometry</b>              | 2               | 6           | 5%            |
| Solution of Triangle             | 2               | 6           | 5%            |
| <b>Sequence &amp; Series</b>     | 1               | 4           | 3%            |
| Sequence & Series                | 1               | 4           | 3%            |
| <b>Binomial Theorem</b>          | 1               | 4           | 3%            |
| Binomial Theorem                 | 1               | 4           | 3%            |
| <b>Statistics</b>                | 1               | 3           | 3%            |
| Statistics                       | 1               | 3           | 3%            |

\*Probability topic is partly in 11 Class and partly in 12 Class as per NCERT, we considered Probability in Class-12.

# भारत का विश्वास

## रेजोनेंस के साथ



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