## INJSO - 2017

## A Detailed Analysis by Resonance

On $28^{\text {th }}$ January 2017, INJSO (Indian National Junior Science Olympiad) - 2017 exam was conducted by Homi Baba Center of Science Education (HBCSE) at about 18 centers in all over the country. INJSO is the stepping stage for selection of aspiring and talented students in the Junior Science Olympiad Program.
Total 35 students will be selected for Orientation Cum Selection Camp (OCSC) i.e Stage-3.
Eligibility: Only Indian citizens born on or after January 1, 2000 appeared for NSEJS 2017 and Students selected from Stage I examination (NSEJS) were appeared for INJSO. The student has to himself re-assure his eligibility. At any stage if the student is found to be not eligible for the exam, he/she may be disqualified from the program.

Syllabus: No detailed syllabus is given for INJSO. There were questions from Physics, Mathematics, Biology and Chemistry.

Question Paper: The medium of test was English only and it comprised of 42 questions. Out of these 30 were objective type questions, each with only one of the four options correct with 1 marks each and -0.25 negative marking for incorrect answer while 12 questions were subjective each with 5 marks making it a 90 marks paper.

305 students got selected for Second Stage i.e. INJSO.

## Overall Marks Distribution

The medium of test was English only and it comprised of 42 questions. Out of these 30 were objective type questions, each with only one of the four options correct with 1 marks each and 0.25 negative marking for incorrect answer while 12 questions were subjective each with 5 marks making it a 90 marks paper.

| Class | 9 |  | 10 |  | 11 |  | 12 |  | Total Count of Question | Total <br> Marks |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Subject | Count of Question | Total Marks | Count of Question | Total Marks | Count of Question | Total Marks | Count of Question | Total Marks |  |  |
| BIOLOGY | 2 | 2 | 2 | 2 | 7 | 15 | 3 | 11 | 14 | 30 |
| CHEMISTRY | 4 | 12 | 6 | 12 | 4 | 6 |  |  | 14 | 30 |
| PHYSICS | 1 | 1 | 4 | 5 | 5 | 12 | 4 | 12 | 14 | 30 |
| Grand Total | 7 | 15 | 12 | 19 | 16 | 33 | 7 | 23 | 42 | 90 |

## 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

| Subject | Difficulty Level |
| :--- | :---: |
| BIOLOGY | 2.43 |
| CHEMISTRY | 2.14 |
| PHYSICS | 2.00 |
| Overall Average | 2.19 |

## Difficulty Level Analysis: No of Questions

|  | BIOLOGY |  | CHEMISTRY |  | PHYSICS |  | Total <br> Question | Total <br> Marks |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Difficulty Level | Number of <br> Questions | Total <br> Marks | Number of <br> Questions | Total <br> Marks | Number of <br> Questions | Total <br> Marks |  |  |
| Easy | 2 | 2 | 4 | 6 | 5 | 6 | 11 | 14 |
| Medium | 4 | 6 | 4 | 12 | 4 | 10 | 12 | 28 |
| Difficult | 8 | 22 | 6 | 12 | 5 | 14 | 19 | 48 |
| Grand Total | 14 | 30 | 14 | 30 | 14 | 30 | 42 | 90 |

Resonance Experts feel that all subjects were of similar difficulty level, while Biology was on tougher side compared with Chemistry \& Physics. While around 14 Marks can be considered easy, 28 marks are moderately difficulty and 48 marks are considered difficult by Resonance Team.

Overall, it is felt by Resonance Faculty Team that paper was on tougher side compared to last year.

Marks Wise Difficulty Breakup



## Physics Analysis

| PHYSICS |  |  |  |
| :---: | :---: | :---: | :---: |
| UNIT \& TOPIC NAME | NO OF QUESTIONS | TOTAL MARKS | (\%) <br> WEIGHTAGE |
| B. Electricity | 2 | 6 | 11.76\% |
| B. Electrical Energy | 1 | 3 | 5.88\% |
| B. Electrical Energy | 1 | 3 | 5.88\% |
| B. Wave Motion \& Sound | 1 | 2 | 5.88\% |
| B. Characteristics of wave motion | 1 | 2 | 5.88\% |
| A. Electricity | 1 | 2 | 5.88\% |
| A. Electric Resistance | 1 | 2 | 5.88\% |
| A. Heat | 1 | 2 | 5.88\% |
| A. Mode of heat transfer | 1 | 2 | 5.88\% |
| A. Light | 1 | 3 | 5.88\% |
| A. Refraction | 1 | 3 | 5.88\% |
| ELECTRICITY | 1 | 1 | 5.88\% |
| Electrical Resistance | 1 | 1 | 5.88\% |
| FORCE AND NEWTON'S LAWS OF MOTION | 1 | 1 | 5.88\% |
| Introduction | 1 | 1 | 5.88\% |
| LIGHT | 4 | 4 | 23.53\% |
| Plane mirror | 2 | 2 | 11.76\% |
| Refraction at spherical surfaces | 2 | 2 | 11.76\% |
| MAGNETIC EFFECT OF CURRENT AND E.M.I. | 1 | 1 | 5.88\% |
| Lenz's law | 1 | 1 | 5.88\% |
| Thermodynamics | 1 | 5 | 5.88\% |
| Specific Heat | 1 | 5 | 5.88\% |
| WAVE MOTION AND SOUND | 2 | 2 | 11.76\% |
| Characteristics of wave motion | 2 | 2 | 11.76\% |
| WORK, ENERGY AND POWER | 1 | 1 | 5.88\% |
| Transformation of Energy | 1 | 1 | 5.88\% |
| Grand Total | 17 | 30 | 100.00\% |

## Chemistry Analysis

| CHEMISTRY |  |  |  |
| :---: | :---: | :---: | :---: |
| UNIT \& TOPIC NAME | NO OF QUESTIONS | TOTAL MARKS | (\%) <br> WEIGHTAGE |
| Mole Concept | 1 | 5 | 5.88\% |
| Stoichiometry | 1 | 5 | 5.88\% |
| B. Mole Concept | 1 | 2 | 5.88\% |
| B. Percentage Composition | 1 | 2 | 5.88\% |
| B. Equivalent Concept | 1 | 2 | 5.88\% |
| B. Titration | 1 | 2 | 5.88\% |
| A. Mole Concept | 1 | 3 | 5.88\% |
| A. Molecular Formula | 1 | 3 | 5.88\% |
| A. Mole Concept <br> B. Acid, Base \& Salts | 2 | 5 | 11.76\% |
| A. Concentration of Solution | 1 | 3.5 | 5.88\% |
| B. Hardness of Water | 1 | 1.5 | 5.88\% |
| A. (1) METALS AND NON-METALS <br> (2) Acid, Base \& Salt | 1 | 3 | 5.88\% |
| A. (1) Chemical Properties <br> (2) Salt | 1 | 3 | 5.88\% |
| ACIDS, BASES AND SALTS | 1 | 1 | 5.88\% |
| Indicators \& Chemical Properties | 1 | 1 | 5.88\% |
| METALS AND NON-METALS | 2 | 2 | 11.76\% |
| Metallurgy | 1 | 1 | 5.88\% |
| Chemical Properties | 1 | 1 | 5.88\% |
| MOLE CONCEPT | 3 | 3 | 17.65\% |
| Calculation of Number of Partical | 1 | 1 | 5.88\% |
| Limiting Reagent | 1 | 1 | 5.88\% |
| Stoichiometry | 1 | 1 | 5.88\% |
| PERIODIC TABLE AND PERIODICITY IN PROPERTIES | 2 | 2 | 11.76\% |
| Ionic Radii | 1 | 1 | 5.88\% |
| lonisation energy | 1 | 1 | 5.88\% |
| STUDY OF GAS LAWS | 2 | 2 | 11.76\% |
| Ideal gas equation | 2 | 2 | 11.76\% |
| Grand Total | 17 | 30 | 100.00\% |

## Biology Analysis

| BIOLOGY |  |  |  |
| :---: | :---: | :---: | :---: |
| UNIT \& TOPIC NAME | NO OF QUESTIONS | TOTAL MARKS | (\%) <br> WEIGHTAGE |
| Genetics | 1 | 5 | 6.25\% |
| B. Circulatory system in human being | 1 | 2 | 6.25\% |
| B. Molecular Biology | 1 | 3 | 6.25\% |
| A. Reproduction | 1 | 2 | 6.25\% |
| A. Transportation | 2 | 8 | 12.50\% |
| CELL | 2 | 2 | 12.50\% |
| Diversity | 1 | 1 | 6.25\% |
| EXCRETION | 1 | 1 | 6.25\% |
| Immunology | 1 | 1 | 6.25\% |
| Organ Transplatation | 1 | 1 | 6.25\% |
| Movement and Locomotion | 1 | 1 | 6.25\% |
| Movement and Locomotion | 1 | 1 | 6.25\% |
| REPRODUCTION | 1 | 1 | 6.25\% |
| Asexual Reproduction | 1 | 1 | 6.25\% |
| RESPIRATION | 1 | 1 | 6.25\% |
| Cellular Respiration | 1 | 1 | 6.25\% |
| TRANSPORTATION | 2 | 2 | 12.50\% |
| Transportation in higher plants | 2 | 2 | 12.50\% |
| Grand Total | 16 | 30 | 100.00\% |

## Expected Cutoff

Resonance Experts feel that while the overall paper was difficult from previous year, the cutoff is expected to decrease from last year. As per Resonance Experts, cutoff 39 to 41 Mark.

