



Mendeleev's Chemical Trials

Welcome to Mendeleev's Chemical Trials, the ultimate Chemistry Category in this year's Olympiad. This category offers much more than mere textbook chemistry: rounds that are more exciting and require participants to be on their toes. Round 1 will involve participants answering questions at different stations, whereas Round 2 will require more written work; the aggregate score of both rounds will determine the winner. Bear in mind that Round 1 is a knockout; those who fail to perform well will not qualify for the next round, and only those teams who pass the knockout round will get to compete in Round 2. Below is a brief description of both rounds, with sample questions provided where deemed necessary.

Round 1:

As outlined above, Round 1 will consist of 5 stations, spread out in a classroom, each station under the supervision of a supervisor. The stations with brief details are as follows:

1. Mystery Substance Recognition: Identify mystery substances, including ionic salts, aqueous compounds, acids, bases, and metals, based on physical appearance and physical properties. Each substance will have upto 5 hints given to aid in guessing

2. Periodic Puzzle: 10 Short quick fire questions/answers.

Sample: Q. What is the H-N-H bond angle in NH₃ Ans: 107.0°

3. Visual Round: Structures, apparatus and chemical reactions/processes would be displayed, which the participants would have to identify.

4. Fake news Chemistry: True and false statements are given, in which candidates have to tick the correct option.

Sample: Q. 'Permanent Dipole, Permanent Dipole are the strongest intermolecular forces'

Answer: False

5. Mystery Reaction Demo:

10 Chemical Reaction equations would be given to candidates, which the candidates will not only have to balance, but also figure out what's going on in the reaction, in terms of products produced, reactants used up, or entropy changes.

Sample: $\text{N}_2 + \text{H}_2 \rightarrow \text{NH}_3$ Balance the equation and figure out what's happening in terms of products produced and the name of the process.

Answer: $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$ Haber's Process, commercial production of Ammonia

Each station will hold a maximum of 10 points, so overall in Round 1, teams will be marked out of a total of 50. Passing marks for the next category will be decided by the subject head on the spot, considering the number of teams and the overall threshold.

Delegate Cap: 2

Round 2:

Teams would compete with each other in this round in 2 parts, Mcqs and a science crossword.

Mcqs:

Every team would get to answer MCQs displayed on a Multimedia screen, sheets would be provided for working, and teams would have to complete all 10 MCQs in 10 minutes (1 min per MCQ). Each MCQ would carry 2 points. The number of qs are tentative and might change with respect to the number of teams.

Science Crossword:

A crossword will be given to students of 30 words, which will include 15 words down and 15 words across. Each word will have a hint describing it, which the candidates will have to correctly interpret.

Sample: 'Compound' could be hinted at as 'A substance made up of elements that are chemically combined'

This round carries 50 points too (20 points MCQs + 30 points Crossword) With this round, our category would end. Winners, Runner-ups, and the top 5 will be decided on the aggregate score of both rounds

Delegate Cap: 3

Conclusion

Chemistry may appear as a boring, mundane subject to many, and if you happen to feel that way too, it's completely normal. Creating this category's main purpose was to take out that perception and give candidates hands-on experience. The category may appear simple as we focused on not making things complicated, but beware it's not as easy as it seems. We've ensured to make it competitive so everyone gets a shot at winning it.

Absolutely thrilled to host you guys, and looking forward to meeting all of you on the 23rd.

Syllabus: All concepts, principles, and tasks assessed in this round will be based on the O Levels, A Levels, and FSC Chemistry curricula.