

SCINNOVA
VIII

ILLUMINATIO

STUDY GUIDE

Attention, future chemists! Get ready to embark on a thrilling journey through the molecular world, where atoms dance, bonds form and break, and reactions ignite the very essence of life. This module will challenge you to explore the principles, processes, and applications of chemistry, testing your ability to think critically, solve complex problems, and apply your knowledge to real-world scenarios.

Your ultimate guide for this chemical adventure is below—packed with the key concepts and tools you'll need to conquer each round. So, grab your lab coat, sharpen your mind, and prepare to dive into the fascinating world of atoms and molecules!

Round1:

Ever wondered how chemistry plays a role in the cosmetics and hygiene products you use daily? Well, now's your chance to dive into this fascinating world, where chemistry shapes everything from beauty creams to cleaning solutions. Get ready to explore the science behind everyday products with a chemical twist!

Content we expect you to know:

1. Emulsions, emulsifiers and solutions.
2. Heat, temperature and states of matter.
3. Stoichiometry and salt formation.
4. pH, stability and chemical energetics.
5. Organic chemistry and reactivity.

Round 2:

They say Monopoly is just a game and marathons require a large track. Let's prove them wrong by exploring the dynamic aspects of chemistry that make it much more than just a subject. Ready to push the boundaries of your knowledge?

Content we expect you to know:

1. Stoichiometry with every implication.
2. Titrations and use of indicators.
3. Salt analysis: tests for Mg^{2+} , Ba^{2+} , Fe^{3+} , Cu^{2+} , halides, nitrate & sulfate ions.
4. The basic galvanic cell formation with Ecell calculations.
5. Tests for ammonia and carbon dioxide.
6. Iodoform reaction (practical) and organic species (alcohols & aldehydes); Tollen's &
7. Fehling's Reagents for aldehyde vs ketone distinction.



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