

IJMB Chemistry Past Questions (Compiled)

Chemistry Questions

1. Define atomic number and mass number, and explain their significance.
2. Describe the electronic configuration of elements and how it relates to the periodic table.
3. Explain the different types of chemical bonds with examples.
4. Discuss the concept of molarity and how to prepare standard solutions.
5. Outline the steps and apparatus used in the titration process.
6. What is the periodic trend in electronegativity across a period and down a group?
7. Describe the properties and uses of Group 1 (alkali metals).
8. Explain the laws of chemical combination with examples.
9. Describe the process of electrolysis and its industrial applications.
10. Discuss the importance of catalysts in chemical reactions.

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Answers

1. Atomic number is the number of protons in the nucleus of an atom; mass number is the total number of protons and neutrons...
2. Electronic configuration shows the distribution of electrons in shells; it determines element's chemical properties and position in periodic table...
3. Chemical bonds include ionic (transfer of electrons), covalent (sharing electrons), and metallic bonds (sea of electrons)...
4. Molarity is moles of solute per liter of solution. Standard solutions are prepared by accurately dissolving a known amount of solute...
5. Titration involves mixing a known volume of acid/base with an indicator to find the concentration of an unknown solution...
6. Electronegativity generally increases across a period and decreases down a group due to changes in nuclear charge and shielding...
7. Group 1 metals are very reactive, soft, and have low melting points; used in batteries, and chemical synthesis...
8. Laws of chemical combination include the law of conservation of mass and the law of definite proportions...
9. Electrolysis breaks down compounds using electric current; used in extraction of metals and electroplating...
10. Catalysts speed up reactions without being consumed, lowering activation energy; important in industrial processes...