

Natural Sciences Minimum Contents

8^oCCNN

Note: All minimum contents can be used to ask reasoning questions as knowing them implies understanding them.

1st Evaluation

1. Differences between fundamental and derived physical quantities. Examples of each and corresponding units.
2. Scientific notation. Conversion factors: Problems.
3. General or extensive vs characteristic or intensive properties of matter and some examples.
4. Concept of mass, volume and density: the mathematical relationship between them (density formula), and its application (density problems).
5. Particle model of matter (kinetic molecular theory) to describe states of matter and changes of state; definition of boiling point and freezing point.
6. Different between pure substances and mixtures.
7. Differences between homogeneous and heterogeneous mixtures.
8. Definition of solution.
9. Concentration calculations: concentration by mass (g/L) ; mass %
10. Concept of solubility.

2nd Evaluation

11. Concept of atom. Characteristics of subatomic particles (electrons, protons and neutrons).
12. Concept of atomic number (Z) and mass number (A).
13. Concepts of cation and anion. Inorganic chemical formulation.
14. Understanding the periodic table. Concept of group and period.
15. Calculate (relative formula mass) molecular mass and moles.
16. Law of conservation of mass. Balancing equations. Stoichiometry problems (mole to mole calculations).