

**CHART - 7** > Give reasons for the following

1. Fractional distillation and not a separating funnel is used for separating a mixture of methyl alcohol and water.
2. Silver salts [eg. silver bromide] are generally kept in dark coloured bottles.
3. The residual solution remains colourless when sodium is added to cold water but turns turbid when calcium is added to the same.
4. Dilute hydrochloric acid reacts with magnesium liberating hydrogen, but the same is not liberated when the acid reacts with lead.
5. Zinc hydroxide is considered an amphoteric hydroxide.
6. An oxyhydrogen flame is used for welding two metallic pieces together.
7. Isotopes of chlorine have the same number of electrons but differ in the number of neutrons.
8. Sewage is considered as a biodegradable pollutant.
9. Chlorine shows similarities in properties with bromine and iodine present in group 17 [VII A] of the Modern Periodic Table.
10. Lime water cannot be used as a test to distinguish between the gases carbon dioxide and sulphur dioxide.
11. The percentage of carbon dioxide in the atmosphere remains constant at around 0.03% by volume.
12. Hydrogen shows both electropositive and electronegative character.
13. Dobereiner's law of triads was not accepted as a basis of classification of elements.
14. 'A catalyst is a substance *which increases the rate of a chemical reaction* but remains unaltered at the end of the reaction.' This definition of a catalyst is deemed incorrect.
15. Separation of a mixture of one soluble solid from the other soluble solid in a particular solvent is carried out by fractional crystallization.
16. Atomic mass of sulphur is a whole number but that of chlorine is not.
17. Hydrogen can be prepared from dilute sulphuric acid using zinc but not lead.
18. Oil spills are highly detrimental to marine life and coastal regions.
19. Zinc reacts with dilute sulphuric acid liberating hydrogen but not with dilute nitric acid.
20. Metallic zinc and water are the two products formed when hydrogen is passed over heated zinc oxide.
21. The atomic number of an element is equal to the number of electrons in the atom of an element.
22. Atoms of elements other than noble gases are assumed to have unstable electronic configuration.
23. Photosynthesis helps in the balance of carbon dioxide in the air.
24. Absolute zero is only a theoretical concept and not a practical one.

25. Hydrogen and ammonia cannot be separated by the technique of diffusion through a porous pot but can be separated by dissolution in water or preferential liquefaction.
26. The halogen, chlorine of group 17 [VIIA] displaces bromine from potassium bromide.
27. When a substance changes from solid state to a liquid state at a particular temperature the inter-particle space increases and the inter-particle attraction decreases.
28. The Law of Conservation of Mass correlates with Daltons atomic theory.
29. At constant temperature, the volume decreases by half on doubling the pressure.
30. If absolute temperature is doubled, the pressure also doubles.
31. Colloidal solutions differ from true solutions.
32. Centrifugation can be used for separating a more dense component from a less dense component.
33. The valency of oxygen in water is '2'.
34. All equations must be balanced to comply with the 'Law of Conservation of Mass.'
35. In the reaction of  $\text{H}_2\text{S}$  with conc.  $\text{HNO}_3$  to give water, nitrogen dioxide & sulphur - the oxidised product is sulphur.
36. The product of burning of a candle are - carbon dioxide & water vapour.
37. Dissolved air in water is significant for aquatic plants & animals.
38. Temperature is always taken into consideration in preparing a saturated solution of a solute in a solvent.
39. The atomic structure of an element is deduced from its atomic number & mass number.
40. Argon present in group 18 has a stable electronic configuration, but chlorine in group 17 of the Modern Periodic Table does not.
41. Hydrogen gas is used as a fuel in the form of coal gas or water gas.
42. Elements if arranged in increasing order of atomic number, showed similarity in properties after regular intervals.
43. On moving down a subgroup of the Modern Periodic Table - the chemical properties of the elements remain similar or vary gradually.
44. In the preparation of hydrogen in the laboratory using dilute  $\text{HCl}$ , granulated zinc and not metallic zinc is used.
45. Physical properties of the isotopes of chlorine are different, but its chemical properties are similar.
46. In the conversion of iron [II] chloride to iron [III] chloride using chlorine - chlorine acts as an oxidising agent in the said conversion.
47. Increase in chemical nutrients in an ecosystem is harmful for marine organisms.
48. Drilling fluids used in offshore oil drilling should be biodegradable.