MERCY MEMORIAL SCHOOL, KANPUR
MULTIPLE CHOICE QUESTIONS – 2021 -22
SUBJECT: - CHEMISTRY
DATE: 14-09-2021 TOPIC: - Mole concept, analytical chemistry & electrolysis CLASS: - X

1. The empirical formula of the compound is C_2H_3, then what will be its probable molecular formula:

a) C_2H_4
b) C_4H_6
c) C_6H_{12}
d) C_2H_2

2. The simplest ratio of carbon and hydrogen is 2:5. Identify the molecular formula:

a) C_6H_6
b) C_2H_4
c) C_4H_{10}
d) C_3H_{15}

3. The simplest ratio of the Carbon, hydrogen and oxygen is 4:8:1. Identify the most appropriate molecular formula:

a) C_4H_8O
b) C_2H_4O
c) $C_2H_8O_2$
d) $C_4H_8O_2$

4. The molecular formula gives:

a) simplest ratio of atoms
b) actual whole number ratio of atoms
c) whole number ratio of atoms
d) natural number ratio of atoms

5. Find the percent composition of N_2S_2.

a) N= 69.6% S= 30.4%
b) N= 36% S= 75.6%
c) N= 96.6% S= 3.4%
d) N= 30.4% S= 69.6%

6. What is the empirical formula for the following molecular formula C_6H_{14}:

a) C_6H_{14}
b) C_3H_7
c) CH_2
d) CH_3

7. What is the molecular formula if the empirical formula is C_2H_5 and the molecular molar mass is 58.14 g/mol?

a) C_2H_5
b) C_4H_{10}
c) $C_1H_{2.5}$
d) C_4H_8

8. When NaOH solution is added to Zinc nitrate solution, then:

a) Chalky white ppt. formed
b) Gelatinous white ppt. formed
c) Dirty green ppt. formed
d) No observation

excess

9. Identify the compound formed when copper hydroxide reacts with ammonium hydroxide:
   a) Copper oxide
   b) Copper nitrate
   c) Copper (II) sulphate
   d) Tetraamine copper (II) hydroxide

10. Hydroxide of this metal is soluble in sodium hydroxide solution:
   a) Silver
   b) Magnesium
   c) Lead
   d) Copper

11. The observation noticed when ammonium chloride combines with lead nitrate:
   a) A reddish brown gas evolves
   b) A colourless gas evolves which turns moist red litmus blue.
   c) A green coloured gas evolves which turns moist blue litmus paper red.
   d) A white precipitate is formed.

12. Name the reagent used to distinguish zinc nitrate solution from lead nitrate:
   a) KOH (aq)
   b) NH_4OH (aq)
   c) $AgNO_3$
   d) HCl

13. Which of the following salt with conc. Sulphuric acid gives fumes which on passing into silver nitrate solution gives white precipitate:
   a) Zinc chloride
   b) Magnesium sulphate
   c) Sodium nitrate
   d) Copper sulphate

14. The yellow compound which is water insoluble but dissolves in caustic potash:
   a) Copper oxide
   b) Ferric oxide
   c) Aluminium oxide
   d) Lead oxide

15. The nitrate which gives black residue on heating:
   a) Copper nitrate
   b) Calcium nitrate
   c) Ferric nitrate
   d) Aluminium nitrate

16. Which of the following compound with barium chloride gives white ppt. that with hydrochloric acid Dissolves:
   a) Zinc sulphate
   b) Zinc carbonate
   c) Zinc chloride
   d) Zinc nitrate

17. Which is the weak electrolyte amongst four
   a) Aqueous acetic acid
   b) Dilute Sulphuric Acid
   c) Sodium chloride solution
   d) Dilute Hydrochloride solution

18. When fused lead bromide is electrolyd we observe?
    a) A silver-grey deposit at the anode and a reddish-brown deposit at the cathode
    b) A silver-grey deposit at the cathode and a reddish-brown deposit at the anode
    c) A silver-grey deposit at the cathode and reddish-brown fumes at the anode
    d) Silver grey fumes at the anode and reddish-brown fumes at the cathode

19. The electrolyte used for electroplating an article with silver is?
    a) Silver nitrate solution
    b) Silver cyanide solution
    c) Nickel sulphate solution
    d) Sodium argentocyanide solution

20. Which electrolyte completely dissociates into ions?
    a) Alcohol
    b) Carbonic Acid
    c) Sucrose
    d) Sodium hydroxide

21. Cathode is electrically
    a) Positively charged
    b) Negatively charged
    c) Neutral
    d) None of these

22. The whole apparatus of electrodes, electrolytes and vessel containing them is called
    a) Thermometer
    b) Electrometer
    c) Ammeter
    d) Voltameter

23. Reduction occurs at which electrode:
    a) Cathode
    b) Anode
    c) Near the inner wall of electrolytic cell
    d) None of these

24. The mass of a substance produced at an electrode is proportional to the
    a) Quantity of electricity passing through electrolyte
    b) The amount of electrolyte
    c) Concentration of water
    d) All of these

25. The electrolysis of molten lead bromide is carried out in
    a) aluminium vessel
    b) silica crucible
    c) graphite cell
    d) glass crucible

26. Metal which can be refined by electrolysis
    a) Zn
    b) Cu
    c) Pb
    d) All of these

27. The reaction which occurs at anode during electroplating of an article with silver

a) $Ag - e^- \longrightarrow Ag^+$
b) $Ag^+ + e^- \longrightarrow Ag$
c) $OH^- \longrightarrow OH + e^-$
d) No reaction

28. Which is correct for electroplating

a) Low voltage current is passed for long time
b) A.C. is used
c) The article to be plated is always made anode
d) The cathode should be replaced periodically

29. Which one of the following statements is NOT correct?

a) Pure water does not allow a current to flow through it.
b) Electrodes that react with the electrolyte are said to be "active".
c) Ions must be present in the electrolyte in order that it conducts electricity.
d) The electrolyte only conducts when in the molten or in aqueous state.

30. In an electroplating experiment carried out by students in a school laboratory, the cathode used was made of steel. The electrolyte used was a solution of nickel sulphate.
What type of anode was most likely used in order to make the experiment a success?

a) Copper
b) Nickel
c) Carbon
d) Iron

31. When an aqueous solution conducts electricity

a) there is always a gas produced at one electrode.
b) hydrogen or oxygen gas produced.
c) evidence of a chemical change.
d) a metal deposited at the cathode.

32. What will happen during the electrolysis of aqueous solution of CuSO4 by using platinum electrodes?

a) Copper will deposit at cathode.
b) Copper will deposit at anode.
c) Oxygen will be released at anode
d) Copper will dissolve at anode.

33. What will happen during the electrolysis of aqueous solution of CuSO4 in the presence of Cu electrodes?

a) Copper will deposit at cathode.
b) Copper will dissolve at anode.
c) Oxygen will be released at anode.
d) Copper will deposit at anode.

34. Which one is active electrode

a) Graphite
b) Platinum
c) Silver
d) All of these

35. The particles present in strong electrolyte are:

a) Only molecules
b) Only atoms
c) Mainly ions
d) Both ions and molecules

36. The ion which get discharged most readily

a) Sulphate
b) Bromide
c) Hydroxide
d) Nitrate

37. The acid preferred in electrolysis of water

a) Dilute nitric acid
b) Dilute sulphuric acid
c) Concentrated nitric acid
d) Acetic acid

38. The volume of hydrogen and oxygen obtained in electrolysis of water is

a) 2:1
b) 1:2
c) 1:1
d) 3:1

39. In the electrolysis of copper sulphate solution using copper electrode

a) Blue colour of solution fades away
b) Blue colour of solution does not fade away
c) Electrode will deposit a blue layer
d) Oxygen will evolve at cathode

40. Selective discharge of ions at electrode depends on

a) The relative position of ions in the electrochemical series
b) The relative concentration of ions
c) The nature of the electrodes
d) All of the above