

RTVM

REVISION EXAMINATION - 2024

CHEMISTRY

12 - Std

--	--	--	--	--	--

Time : 3.00 Hrs

Marks : 70

PART - I

15 X 1 = 15

Note : i) Answer all the questions. ii) Choose the appropriate answer from the given four alternatives and write the option code and the corresponding answer.

1. Wolframite ore is separated from tinstone by the process of
a) smelting b) calcination c) Roasting d) electromagnetic separation
2. Graphite and diamond are respectively.
a) covalent and molecular crystals b) Ionic and covalent crystals
c) Both are covalent crystals d) Both are molecular crystals.
3. The correct order for the bond dissociation enthalpy of Halogen molecules is
a) $Br_2 > I_2 > F_2 > Cl_2$ b) $F_2 > Cl_2 > Br_2 > I_2$
c) $I_2 > Br_2 > Cl_2 > F_2$ d) $Cl_2 > Br_2 > F_2 > I_2$
4. **Assertion :** Ce^{4+} is used as an oxidising agent in volumetric analysis
Reason : Ce^{4+} has the tendency of attaining +3 is oxidation state.
a) Both assertion and reason are true and reason is the correct explanation of assertion.
b) Both assertion and reason are true but reason is not the correct explanation of assertion
c) Assertion is true but reason is false.
d) Both the assertion and reason are false
5. The IUPAC name of $K_3[Al(C_2O_4)_3]$ is
a) potassium trioxalato aluminium (III) b) Potassium trioxalato aluminate (II)
c) Potassium tri oxalato aluminate (III) d) Potassium tri oxalato aluminate (III)
6. The packing fraction of body centred cube (bcc) is
a) 52.31% b) 68% c) 86% d) 52.13%
7. When the initial concentration of the reactant is doubled, the half life also doubled. Then the order of the reaction is
a) zero b) one c) fraction d) none of these
8. Conjugative base of $H_2PO_4^-$ is a) PO_4^{3-} b) P_2O_5 c) H_3PO_4 d) HPO_4^{2-}
9. The molar conductivity of a 0.5 mol dm^{-3} solution of $AgNO_3$ with electrolytic conductivity $5.76 \times 10^{-3} S cm^{-1}$ at 298 k is
a) $2.88 Scm^2 mol^{-1}$ b) $11.52 Scm^2 mol^{-1}$ c) $0.086 Scm^2 mol^{-1}$ d) $28.8 Scm^2 mol^{-1}$
10. When $\Delta S < 0$ and ΔS gets negative sign,
a) Adsorption is an exothermic process b) Absorption is an exothermic process
c) Adsorption is an endothermic process d) Absorption is an endothermic process
11. The colour obtained when phenol reacts with neutral ferric chloride is
a) Red colour b) Violet colour c) Dark green colour d) No colouration
12. The correct order of relative acidity is
a) $R COOH > ArOH > H_2O > ROH > RC \equiv CH$ b) $ArOH > H_2O > R COOH > ROH > RC \equiv CH$
c) $RC \equiv CH > ROH > H_2O > ArOH > RCOOH$ d) $H_2O > ROH > RC \equiv CH > RCOOH > ArOH$
13. Which of the following reaction is
a) $CH_3CH_2NH_2 \xrightarrow{HNO_2} CH_3CH_2OH + N_2$
b) $(CH_3)_2N - \text{C}_6\text{H}_5 \xrightarrow{NaNO_2/HCl} (CH_3)_2 - \text{C}_6\text{H}_5 - N = N - Cl$
c) $CH_3CONH_2 \xrightarrow{Br_2/NaOH} CH_3NH_2$ d) None of these
14. Which of the following can not be synthesised in the body
a) DNA b) Enzymes c) Hormones d) Vitamins
15. Nylon is an example of a) Polyamide b) Polyethylene c) Polyester d) polysaccharide

PART- II

Note : Answer any six questions. Q. no. 24 is compulsory.

6 X 2

16. What is role of quick lime in the extraction of iron from its oxide Fe_2O_3 ?
17. Write any two differences between white phosphorus and red phosphorus.
18. What are the limitations of VB theory?
19. Calculate the number atoms present in a simple cube.
20. Define solubility product.
21. What are promoters? Give example.
22. Write Clemenson's reduction reaction.
23. Write a note on 'Peptide bond'.
24. i) $nCH_2 = CH_2 \xrightarrow[1000 \text{ atm}]{200^\circ - 300^\circ C} ?$
ii) $nCF_2 = CF_2 \xrightarrow{\Delta} ?$

PART - III

Note : i) Answer any six questions. ii) Q. no. 33 is compulsory.

6 X 3 = 18

25. Explain the principle of electrolytic refining with one example.
26. i) $4 H_3 BO_3 \xrightarrow{373K} ?$
ii) $4 HBO_2 \xrightarrow{413K} ?$
iii) $H_2H_4O_7 \xrightarrow[\text{temp}]{\text{Red int}}$
27. Write any three characteristics of interhalogen compounds.
28. What are the differences between the order of a reaction and molecularity?
29. Write the Kohlraush's law.
30. Write a note on electro osmosis.
31. How acrolein is prepared?
32. How urotropine is prepared? Write its any one use.
33. Write the a) ligand b) CMI c) IUPAC name of $[Co(NH_3)_6]^{3+}$

PART - IV

Note : Answer all the questions.

5 X 5 = 25

34. a) Explain the structure of diborane. (OR)
b) i) How bleaching powder is prepared. ii) What are the uses is chlorine?
35. a) Explain the preparation of potassium dichromate. (OR)
b) i) Differentiate double salts and co - ordination compounds.
ii) What is crystal field stablisation energy?
36. a) Differentiate crystalline solids and amorphous solids. (OR)
b) A first order reaction takes 8 hours for the completion of 90% of the reaction. Calculate the time required for the completion of 80% of the reaction.
37. a) Explain the construction of Daniel cell. Write the cell reaction. (OR)
b) Write the i) Rosenmund reduction. ii) Sandmayer's reaction
38. a) Elucidate the structure of fructose. (OR)
b) i) How trinitro glycerine (TNG) is prepared?
ii) How nylon 2 - nylon 6 is prepared?