

COMMON FIRST REVISION EXAMINATION - 2024

Std - XII

CHEMISTRY

Part - I

Time : 3.00 Hours

Marks: 70

15 x 1 = 15

- Answer all the questions:
 - Wolframite or is separated from Tinstone by the process of
 - smelting
 - Calcination
 - Roasting
 - Electromagnetic separation
 - The compound that is used in nuclear reactors as protective shields and control rods is
 - Metal borides
 - Metal oxides
 - Metal carbonates
 - Metal carbide
 - Most easily liquefiable gas is
 - Ar
 - Ne
 - He
 - Kr
 - A magnetic moment of 4.89BM will be shown by one among the following
 - $TiCl_4$
 - $[CoF_6]^{4-}$
 - $[Cu(NH_3)_4]^{2+}$
 - $[Ni(CN)_4]^{2-}$
 - The vacant space in fcc lattice unit cell is
 - 48%
 - 23%
 - 32%
 - 26%
 - The half life period of a radioactive element is 140 days. After 560 days, 1g of element will be reduced to
 - 1/2g
 - 1/4g
 - 1/8g
 - 1/16g
 - Faradays constant is defined as
 - Charge carried by 1 electron
 - charge carried by one mole of electrons
 - charge required to deposit one mole of substance
 - charge carried by 6.22×10^{10} electrons
 - If x is the amount of adsorbate and m is the amount of adsorbent, which of the following relations is not related to adsorption process?
 - $x/m = f(P)$ at constant T
 - $x/m = f(T)$ at constant P
 - $P = f(T)$ at constant m
 - $x/m = PT$
 - Isopropylbenzene on air oxidation in the presence of dilute acid gives
 - C_6H_5-COOH
 - $C_6H_5-COCH_3$
 - $C_6H_5-CO-C_6H_5$
 - C_6H_5-OH
 - Vitamin B₆ is also known as
 - Riboflavin
 - Thiamine
 - Nicotinamide
 - Pyridoxine
 - Nylon is an example of
 - Polyamide
 - Polythene
 - Polyester
 - Poly saccharide
 - The Molecular formula for Zeiglar-Natta catalyst is
 - $TiCl_2 + Al(C_2H_5)_3$
 - $TiCl_3 + Al(CH_3)_3$
 - $TiCl_4 + Al(C_2H_5)_3$
 - $TiCl_4 + AlCl_3$
 - The pOH of 10^{-3} M HCl solution will be
 - 11
 - 12
 - 3
 - 10
 - Formalin is
 - 40% solution of Formic acid
 - 40% solution of Acetaldehyde
 - 40% solution of Farnaldehyde
 - 40% solution of Acetone
 - Sweet spirit of nitre is used as
 - manufacture of backelite
 - diuretic
 - insecticide
 - solvent

Part - II

- II. Answer any six Questions. Question No. 24 is compulsory. 6 x 2 = 12
16. Explain the bleaching action of Sulphur dioxide (SO₂).
 17. Calculate the number of unpaired electrons in Ti³⁺, Mn²⁺ and calculate the spin only magnetic moment.
 18. Give the difference between double salts and co-ordination compounds.
 19. Define Unit cell.
 20. What are the limitations of Arrhenius concept?
 21. What is meant by Electro Osmosis?
 22. Explain the reducing action of formic acid with example.
 23. Aniline does not undergo Friedel-Crafts reaction. Give reason.
 24. $C_6H_5 - OH \xrightarrow{Zn\ dust} A \xrightarrow{CH_3Cl/AlCl_3} B$; Identify compound A and B.

Part - III

- III. Answer any six questions. Question No. 33 is compulsory. 6 x 3 = 18
25. Explain consequences of Lanthanoid contraction,
 26. What are the limitations of VB theory?
 27. Derive Henderson equation.
 28. Derive the half-life period for first order reaction.
 29. What are Homogeneous catalysis and Heterogeneous Catalysis? Give an example.
 30. Write the test for Carboxylic Acid group.
 31. Write a short note on peptide bond.
 32. How do antiseptics differ from disinfectants?
 33. A solution of Silver nitrate is electrolysed for 30 minutes with a current of 2 amperes. Calculate the mass of silver deposited at the cathode.

Part - IV

- IV. Answer the following questions. 5 x 5 = 25
34. a) i) What are the limitations of Ellingham diagram.
ii) Explain the Mond's process of refining Nickel. (OR)
 - b) i) Write the conditions for catenation property.
ii) Give the uses of Argon.
 35. a) On the basis of VB theory explain the nature of bonding in [Co(C₂O₄)₃]³⁻ (OR)
b) Explain Schottky defect and Frenkel defect.
 36. a) Derive an expression for Oswald's Dilution law. (OR)
b) i) Convert glycerol to acrolein.
ii) Write a note on Trans Esterification Reaction.
 37. a) Describe adsorption theory of catalysis. (OR)
b) How will you distinguish between Primary, Secondary and Tertiary aliphatic amines?
 38. a) Elucidate the structure of glucose. (OR)
b) Explain the mechanism of cleansing action of soaps of detergents.