

SECOND REVISION EXAMINATION - 2023

STD - XII

TIME : 3.00 Hrs

CHEMISTRY

MARKS : 70

PART - I

I. Answer all the questions :

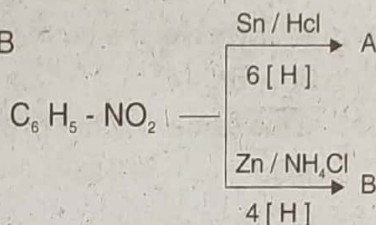
15 x 1 = 15

- Which of the metal is extracted by Hall-Heroult process?
a) Al b) Ni c) Cu d) Zn
- The compound that is used in nuclear reactors as protective shields and control rods is
a) Metal borides b) Metal oxides c) Metal carbonates d) Metal carbides
- Which one of the following orders is correct for the bond dissociation enthalpy of halogen molecules?
a) $\text{Br}_2 > \text{I}_2 > \text{F}_2 > \text{Cl}_2$ b) $\text{F}_2 > \text{Cl}_2 > \text{Br}_2 > \text{I}_2$ c) $\text{I}_2 > \text{Br}_2 > \text{Cl}_2 > \text{F}_2$ d) $\text{Cl}_2 > \text{Br}_2 > \text{F}_2 > \text{I}_2$
- Which one of the following ions has the same number of unpaired electrons as present in Ti^{3+} ?
a) Cr^{3+} b) V^{3+} c) Cu^{2+} d) Ni^{2+}
- IUPAC name of the complex $[\text{FeF}_6]^{4-}$ is
a) Hexa fluoro ferrate I ion b) Hexa fluoro ferrate II ion
c) Hexa fluoro ferrate III ion d) Hexa fluoro ferrate IV ion
- The number of atoms found in a simple, body centered and face centered cubic unit cell are respectively
a) 1, 4, 2 b) 4, 1, 2 c) 2, 1, 4 d) 1, 2, 4
- Assertion : rate of reaction doubles when the concentration of the reactant is doubles if it is a first order reaction.
Reason : rate constant also doubles.
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 assertion and reason are false.
- The pH of 10^{-5} M KOH solution will be
a) 9 b) 5 c) 19 d) none of these
- Faradays constant is defined as
a) charge carried by 1 electron b) charge carried by one mole of electrons
c) charge required to deposit one mole of substance d) charge carried by 6.22×10^{10} electrons
- Which one of the following is negatively charged colloid?
a) arsenic sulphide b) Ferric hydroxide c) Haemoglobin d) Basic dyes
- Williamson synthesis of preparing dimethyl ether is a / an /
a) $\text{S}_\text{N}1$ reactions b) electrophilic addition c) electrophilic substitution d) $\text{S}_\text{N}2$ reaction
- In which of the following reactions new carbon-carbon bond is not formed?
a) Aldol condensation b) Friedel - craft reaction c) Kolbe's reaction d) Wolf kishner reaction
- Aniline + benzoylchloride $\xrightarrow{\text{NaOH}} \text{C}_6\text{H}_5 - \text{NH} - \text{CO} \text{C}_6\text{H}_5$ this reaction is known as
a) Friedel - crafts reaction b) HVZ reaction c) Schotten - Baumann reaction d) none of these
- Vitamin C is also known as
a) Retinol b) Ascorbic acid c) Thiamine d) Riboflavin
- Nylon is an example of
a) polyamide b) polythene c) polyester d) poly saccharide

II. Answer any six questions. Q.No.24 is compulsory

6 x 2 = 12

16. What is the role of limestone in the extraction of iron from its oxide Fe_2O_3 ?
17. What are the uses of silicones?
18. Which is more stable? Fe^{3+} or Fe^{2+} - Explain.
19. What is Bragg's equation?
20. Define Half life period.
21. What are lewis acids and bases? Give an example for each?
22. How will you convert ethylen glycol into 1, 4 - dioxane?
23. Write the Zwitter ion structure of alanine.
24. From the following reaction, identify A and B



PART - III

III. Answer any six questions. Q.No.33 is compulsory

6 x 3 = 18

25. How is bleaching powder prepared?
26. Write a short note on Zeigler - Natta catalyst.
27. Write three hydrate isomers of the complex with the molecular formula $\text{CrCl}_3 \cdot 6 \text{H}_2\text{O}$
28. Explain pseudo first order reaction with an example.
29. State Kohlrausch law.
30. Write a note on catalytic poison.
31. What is urotropine? How is it prepared?
32. What are biodegradable polymers? Give examples.
33. A solution of silver nitrate is electrolysed for 20 minutes which a current of 2 amperess. Calculate the mass of silver deposited at the cathode.

PART - IV

IV. Answer all the questions.

5 x 5 = 25

34. (a) Explain troth flotation process (OR)
(b) (i) Write the reactions that occur when boric acid is heated. (3)
(ii) What is phosphorescence? (2)
35. (a) What is lanthanoid contraction and what are the effects of lanthanoid contraction. (OR)
(b) (i) Give the difference between double salts and coordination compounds. (2)
(ii) Based on the VB theory, Explain why $[\text{Ni}(\text{CN})_4]^{2-}$ is diamagnetic. (3)
36. (a) Calculate the percentage efficiency of packing in case of body centered cubic crystal. (OR)
(b) Derive an expression for ostwald's dilution law.
37. (a) (i) Write the cell reaction of a Daniel cell. (2)
(ii) Describe adsorption theory of catalysis. (3) (OR)
(b) (i) Write the Lucas test to differentiate 1° , 2° and 3° alcohols. (3)
(ii) Write the coupling reaction for phenol. (2)
38. (a) Write the mechanism of aldol condensation reaction. (OR)
(b) (i) Write a note on Sabatier - Mailhe method. (2)
(ii) Give any three difference between DNA and RNA. (3)