

STD : 12

CHEMISTRY

Marks : 70

Time: 3.00 hrs

15 x 1 = 15

I. Choose the correct answer:

- Zinc is obtained from ZnO by
a) Carbon reduction b) Reduction using silver c) Electrochemical process d) Acid leaching
- Oxidation state of carbon in its hydrides
a) +4 b) -4 c) +3 d) +2
- Hybridization of XeOF_4 is
a) sp^3 b) sp^3d c) sp^3d^2 d) sp^3d^1
- Assertion : Ce^{4+} is used as an oxidizing agent in volumetric analysis.
Reason : Ce^{4+} has the tendency of attaining +3 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 assertion and reason are false.
- Primary and secondary valencies of Ni in $[\text{Ni}(\text{en})_3]\text{Cl}_2$
a) 3, 3 b) 3, 2 c) 2, 6 d) 6, 2
- The ratio of close packed atoms to tetrahedral hole in cubic packing is
a) 1:1 b) 1:2 c) 2:1 d) 1:4
- If 50% of a first order reaction is completed in 60 minutes, 75% of the same reaction would complete is
a) 50 min b) 60 min c) 90 min d) 120 min
- Which of the following can act as Lowry - Bronsted acid as well as base?
a) HCl b) SO_4^{2-} c) HPO_4^{2-} d) Br
- is used in Laptop
a) Lead storage battery b) Fuel cell c) Mercury button cell d) Lithium in battery
- Collodion is a 4% solution of which one of the following compounds in alcohol - ether mixture?
a) Nitroglycerine b) Cellulose acetate c) Glycoldinitrate d) Nitrocellulose
- Carbolic acid is
a) Phenol b) Picric acid c) benzoic acid d) phenylacetic acid
- The reagent used to distinguish between acetaldehyde and benzaldehyde is
a) Tollens reagent b) Fehling's solution c) 2,4 - dinitrophenyl hydrazine d) semicarbazide
- The basic character of amine is due to the
a) tetrahedral structure b) presence of nitrogen atom c) lone pair of electrons on nitrogen atom d) high electronegativity of nitrogen.
- Which one of the following is not produced by body?
a) DNA b) Enzymes c) Harmones d) Vitamins
- Non stick cook wares generally have a coating of a polymer, whose monomer is
a) ethane b) prop-2-enenitrile c) chloroethene d) 1,1,2,2-tetrafluoroethane

PART - II

Answer any SIX questions. (Q. No 24 is Compulsory)

6 x 2 = 12

16. Write note on Auto - reduction?

17. What is inert pair effect?

18. What is meant by the term 'coordination number'? What is the coordination number of atoms

Kindly send me your answer keys to us - padasalai.net@gmail.com

19. State Ostwald's dilution law.
20. Why are lyophilic colloidal sols are more stable than lyophobic colloidal sol?
21. Write Trans esterification reaction.
22. Aniline does not undergo Friedel - Crafts reaction why?
23. Name the Vitamins whose deficiency cause i) Cheilosis ii) Depression
24. Calculate the Magnetic moment and magnetic property of $[\text{Fe}(\text{CN})_6]^{3-}$

PART - III

Answer any SIX questions. (Q. No 33 is Compulsory)

6 x 3 = 18

25. Explain the following terms with suitable example. i) Gangue ii) slag
26. Give any three uses of Borax.
27. State Hume - Rothery rule for alloy formation.
28. Aluminium crystallizes in a cubic close packed structure. Its metallic radius is 125pm. calculate the edge length of unit cell.
29. What is an elementary reaction? Give the differences between order and molecularity of a reaction.
30. Explain Kolbe's reaction?
31. Write the mechanism of Cannizzaro reaction.
32. How is prepared Decron? Give its any one use?
33. The conductivity of a 0.01M solution of a 1:1 weak electrolyte at 298K is $1.5 \times 10^{-4} \text{ S cm}^{-1}$. Calculate molar conductivity of the solution

PART - IV

Answer all the questions.

5 x 5 = 25

34. a) i) Give the basic requirement for vapour phase refining (2)
ii) Describe a method for refining Nickel. (3)
(or)
b) i) Write note on Fisher tropesch synthesis? (2)
ii) Give the balanced equation for the reaction between chlorine with cold NaOH and hot NaOH. (3)
35. a) i) Which is more stable? Fe^{3+} or Fe^{2+} explain. (2)
ii) Explain Chromyl chloride test? (3)
(or)
b) Write the postulates of Werner's theory. (5)
36. a) i) Distinguish between tetrahedral and octahedral voids? (Any Two) (2)
ii) Explain: Schottky defect (3)
(or)
b) Derive Henderson equation (5)
37. a) i) Why does conductivity of a solution decrease on dilution of the solution? (2)
ii) Explain Tyndall effect (3)
(or)
b) i) What is Urotropine? Give the structure? (2)
ii) Write a note on Levine and Hauser acetylation reaction. (3)
38. a) Compound (A) molecular formula $\text{C}_6\text{H}_6\text{O}$ gives purple colouration with neutral FeCl_3 . Compound (A) reacts with $\text{CHCl}_3 / \text{NaOH}$ gives compound (B) and compound (A) also reacts with benzene diazonium chloride in presence of NaOH at 273 - 278K gives compound (C). Identify the compounds A, B, C and write the reaction. (5)
(or)
b) i) What are harmones? Give an example (2)
ii) Write note on Buna - N rupper? (3)