

Class : 12

COMMON HALF YEARLY EXAMINATION-2023-24

0 1 4 3

Time Allowed : 3.00 Hours

CHEMISTRY
PART - A

[Max. Marks : 70]

15x1=15

- I. Choose the correct answer.
1. Wolframite Ore is separated from Tinstone by the process of
 - a) Smelting
 - b) Calcination
 - c) Roasting
 - d) Electromagnetic Separation
 2. The Compound that is used in nuclear reactors as Protective shields and Control rod is
 - a) Metal Borides
 - b) Metal Oxides
 - c) Metal Carbonates
 - d) Metal Carbide
 3. The shape of $XeOF_2$ is
 - a) Linear
 - b) Square Planar
 - c) T - Shaped
 - d) Pyramidal
 4. Assertion : Ce^{4+} is used as an Oxidising agent in Volumetric Analysis
Reason : Ce^{4+} has the tendency of attaining +3 Oxidation states.
 - 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.
 5. Which of the following is Paramagnetic in Nature?
 - a) $[Zn(NH_3)_4]^{2+}$
 - b) $[Co(NH_3)_6]^{3+}$
 - c) $[Ni(H_2O)_6]^{2+}$
 - d) $[Ni(CN)_4]^{2-}$
 6. The Vacant Space in bcc lattice unit cell is
 - a) 48%
 - b) 23%
 - c) 32%
 - d) 26%
 7. A Zero order reaction $X \rightarrow$ product, with an initial concentration 0.02M has a half life of 10 min. If one starts with concentration 0.04M then the half life is
 - a) 10s
 - b) 5 min
 - c) 20min
 - d) Cannot be predicted using the given information
 8. If the solubility product of Lead iodide is 3.2×10^{-8} , its solubility will be
 - a) $2 \times 10^{-2}M$
 - b) $4 \times 10^{-4}M$
 - c) $1.6 \times 10^{-4} M$
 - d) $1.8 \times 10^{-4} M$
 9. Which of the following Electrolytic Solution has the least Specific Conductance?
 - a) 2N
 - b) 0.002N
 - c) 0.02N
 - d) 0.2N
 10. Which one of the following is positively charged Colloid?
 - a) Arsenic Sulphide
 - b) Clay
 - c) Haemoglobin
 - d) Starch
 11. Which one of the following is the strongest acid.
 - a) 2 - Nitrophenol
 - b) 4 - Chlorophenol
 - c) 4 - Nitrophenol
 - d) 3 - Nitrophenol
 12. The reagent used to distinguish between Aldehyde and Benzaldehyde is
 - a) Tollens Reagent
 - b) Fehling's Solution
 - c) 2,4 - Dinitrophenyl Hydrazine
 - d) Semicarbazide
 13. ----- is used as an Insecticide.
 - a) CH_3NO_2
 - b) $CH_3CH_2NO_2$
 - c) CH_3NH_2
 - d) CCl_3NO_2
 14. Among the following the Achiral amino acid is
 - a) 2 - Ethylalanine
 - b) 2 - methylglycine
 - c) 2 - Hydroxymethyl scrine
 - d) Tryptophan
 15. Natural Rubber.
 - a) Alternate cis - and trans-Configuration
 - b) Random cis - and Trans- Configurati
 - c) All cis - Configuration
 - d) All Trans - Configuration

CH/12/C

PART - B

- ii. Answer any six questions of the following. Question No. 24 is compulsory
16. Give the limitations of Ellingham Diagram?
 17. Give the uses of Borax?
 18. Why do Transition elements show Variable Oxidation States?
 19. Write short notes on Metal deficiency defect with an example
 20. Define Equivalent Conductance?
 21. What are the factors affecting Adsorption?
 22. Write any two tests to differentiate Phenol and Alcohol.
 23. How is Teflon prepared?
 24. Identify A and B

$$\text{Ethanoic acid} \xrightarrow{\text{SOCl}_2} \text{(A)} \xrightarrow{\text{Pd/BaSO}_4} \text{(B)}$$

PART - C

- iii Answer any six questions of the following. Question No. 33 is compulsory.
25. Mention the Condition necessary for Catenation?
 26. Write the reason for the Anamolous behaviour of Nitrogen?
 27. For the Complex $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4$ Mention the following
 a) Nature of the Complex b) Shape of the Complex c) IUPAC Name
 28. Define Half life of a reaction? Show that for the first order reaction, Half life period is Independent of Initial Concentration.
 29. Explain Galvanic Cell Notation?
 30. How is Phenol prepared from Cumene?
 31. Explain Thorpe Nitrile Condensation reaction?
 32. Give any three differences between DNA and RNA?
 33. Calculate the pH of 1.5×10^{-3} M solution of $\text{Ba}(\text{OH})_2$?

PART - D

IV Answer all the questions.

34. (a) (i) What is Acid Leaching? (2)
 (ii) Describe a method for Refining Nickel? (3)
 (OR)
- (b) i) How will you convert Boric acid to Boron Nitride? (2)
 ii) Give the properties of Interhalogen Compounds? (3)
35. (a) What is Lanthanoid Contraction and What are the effects of Lanthanoid Cont?
 (OR)
- (b) Give the main assumptions of Valence Bond Theory? (5)
36. (a) Differentiate Crystalline Solids and Amorphous Solids. (5)
 (OR)
- (b) i) What are Lewis acids and bases. (2)
 ii) Explain the rate determining step with an example. (3)
37. (a) (i) What is Peptisation? (2)
 (ii) What do you mean by Activity and Selectivity of Catalyst? (3)
 (OR)
- (b) Explain the Mechanism of Cannizaro Reaction? (5)
38. (a) Explain the reduction of Nitrobenzene under different medium? (5)
 (OR)
- (b) i) Write a short note on Peptide Bond (2)
 ii) What are Narcotic and Non - Narcotic drugs? Give examples? (3)