SREE SARAVANA NIKETAN MATRIC HR SEC SCHOOL,NERINJIPETTAI – 638311.
I-MID TERM EXAM 2024-2025

STD : XII **MARKS : 70**
SUBJECT : CHEMISTRY **TIME : 3.00 Hrs**

PART - I

Choose the correct answer **15x1 = 15**

1. Zinc is obtained from ZnO by
   a) Carbon reduction b) Reduction using silver
   c) Electrochemical process d) Acid leaching
2. Wolframite ore is separated from tinstone by the process of
   a) Smelting b) Calcination
   c) Roasting d) Electromagnetic separation
3. The metal oxide which cannot be reduced to metal by carbon is
   a) PbO b) Al_2O_3 c) ZnO d) FeO
4. Find add one out based on lead ores
   a) Anglesite b) Cerrusite c) Galena d) Cassiterite
5. Which one of the following oxide is/are unstable at moderate temperatures
   a) Ag_2O b) ZnO c) HgO d)Both a and c
6. The pH of an aqueous solution is Zero. The solution is
   a) slightly acidic b) strongly acidic c) neutral d) basic
7. The aqueous solutions of sodium formate, anilinium chloride and potassium cyanide are respectively
   a) acidic, acidic, basic b) basic, acidic, basic
   c) basic, neutral, basic d) none of these
8. Dissociation constant of NH_4OH is 1.8×10^{-5} the hydrolysis constant of NH_4Cl would be
   a) 1.8×10^{-19} b) 5.55×10^{-10} c) 5.55×10^{-5} d) 1.80×10^{-5}
9. Concentration of OH^- in a solution is 5×10^{-12} M which contains 2×10^{-3}M, H_3O^+ ion the nature of the solution is
   a) basic b) acidic c) neutral d) none of these
10. The pH value of black coffee is _____
    a) 5 b) 4 c) 6 d) 3
11. 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 reduction
12. The formation of cyanohydrin from acetone is an example of
    a) nucleophilic substitution b) electrophilic substitution
    c) electrophilic addition d) Nucleophilic addition
13. Which one of the following reduces tollens reagent
    a) formic acid b) acetic acid c) benzophenone d) none of these
14. Carboxylic acids have higher boiling points than aldehydes, ketones and even alcohols of comparable molecular mass. It is due to their
    a) more extensive association of carboxylic acid via vander Waals force of attraction
    b) formation of carboxylate ion
    c) formation of intermolecular H-bonding
    d) formation of intramolecular H – bonding
15. Correct order of reactivity of the acid derivatives is____
    a) acid halide < acid anhydride < esters < acid amides
    b) acid amides > esters > acid anhydride > acid halide
    c) acid halide > acid anhydride > esters > acid amides
    d) acid amides < esters < acid anhydride < acid halide

PART - II

Answer any six questions Question no.24 is compulsory **6x2 = 12**

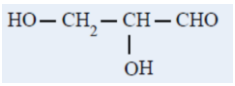
16. What are the various steps involved in extraction of pure metals from their ores?
17. Write note on ammonia leaching
18. Give the limitations of Ellingham diagram

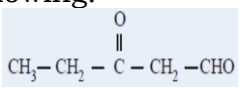
19. Define ionic product of water. Give its value at room temperature.
20. What is buffer solution? Give example
21. How will you prepare Malachitegreen from benzaldehyde and Acetaldehyde from ethyne
22. Give the tests for carboxylic acid
23. Write note on Benzoin condensation
24. Establish a relationship between the solubility product and molar solubility for the following a) $BaSO_4$ b) $Ag_2(CrO_4)$

PART - III

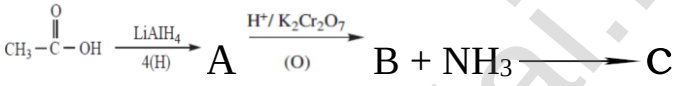
Answer any six questions Question no.33 is compulsory 6x3 = 18

25. Describe a method for refining nickel.
26. Give the uses of zinc
27. Explain common ion effect with an example
28. Derive Henderson – Hasselbalch equation
29. Discuss the Lowry – Bronsted concept of acids and bases.
30. Explain gravity separation method
31. Write the IUPAC name of the following:

a) 

b) 

c) $HOOC\text{-}(CH_2)_4\text{-}COOH$

32. Write note on rosenmund reduction
33. Identify A, B and C 

PART - IV

Answer the following 5x5 = 25

34.a) Explain zone refining process with an example. **(OR)**
b) i) What are the differences between minerals and ores? (3)
ii) Write note on auto-reduction (2)

35. a) Derive an expression for Ostwald's dilution law **(OR)**
b) i) What are the differences between Lewis acids and Lewis bases? (3)
ii) Give the limitations of arrhenius concept (2)

36. a) i) Calculate the pH of 0.1M CH_3COOH solution. Dissociation constant of acetic acid is 1.8×10^{-5} (3)
ii) Write note on Liquation (2) **(OR)**
b) i) Derive relation between p^H and p^{OH} (3)
ii) What are the impurities removed by roasting process? (2)

37. a) Explain Cannizaro reaction mechanism **(OR)**
b) Write note on the following:
i) Popoff 's rule ii) Haloform reaction iii) Urotropine

38. a) Convert the following: i) Benzaldehyde to Cinnamic acid
ii) Toluene to benzoic acid iii) Acetaldehyde to Ethane **(OR)**
b) A Compound (A) with molecular formula C_4H_8 ozonolysis gives (B) which heated with hydrazine and sodium ethoxide to give compound(C). Two moles of (B) warmed with dil NaOH gives compound (D). Compound (D) undergoes dehydration on heating with acid to (E). Identify (A), (B), (C), (D) and (E)

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