SECOND YEAR HIGHER SECONDARY EXAMINATION

Answer any 4 questions from 1 to 5. Each carries one score.

(4 x1=4)

1. Solutions having same osmotic pressure are called _____.
2. The rate constant of a reaction is 1.15 $x10^{-3}$. The order of the reaction is:
3. Lucas reagent is _____.
4. The general electronic configuration of d-block elements is,
5. Which of the following is an ambidentate ligand
   (a) H_2O (b) NH_3 (c) NO_2 (d) Cl

Answer any 8 questions from 6 to 15. Each carries 2 scores.

(8 X 2=16)

6. Differentiate between primary and secondary cells with examples.
7. Write down the Arrhenius equation and explain the terms.
8. Write the IUPAC name of the following compounds,
   (a) $K_3[Fe(CN)_6]$ (b) $[Co(NH_3)_6]Cl_3$
9. Account for the following:
   (a) Transition metals show variable oxidation states.
   (b) Transition metals form coloured compounds.
10. Identify the product and name the rule,

CH_3- CH(Br)- CH_2- CH_3 $\xrightarrow{\text{alcoholic KOH}}$ A

11. Explain Hoffmann Bromamide reaction with equation.
12. What is denaturation of protiens? Give example.
13. Which is more acidic? Acetic acid or chloroacetic acid. Give reason.
14. How will you distinguish between propanone and propanal?
15. With the help of a chemical equation explain Wurtz reaction.

Answer any 8 questions from 16 to 25. Each carries 3 scores.

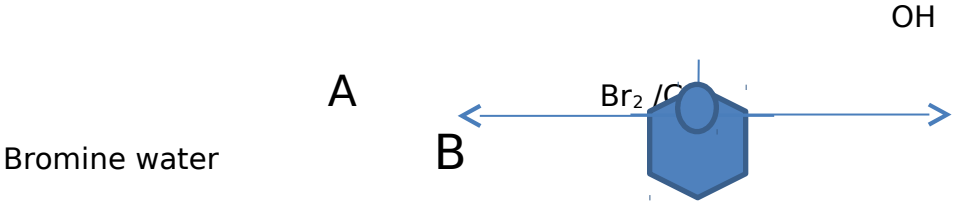
(8 x 3=24)

16. Osmotic pressure is a colligative property.
    (a) Define osmotic pressure.
    (b) 1.00 g of a non-electrolyte solute dissolved in 50 g of benzene lowered the freezing point of benzene by 0.40 K. The freezing point depression constant of benzene is 5.12 K kg/mol. Find the molar mass of the solute.
17. (a) Write down the anode and cathode reactions of Daniel cell.
    (c) Give the Nernst equation for the EMF of Daniel cell.
18. Give three differences between order and molecularity.
19. Half- life period of a first order reaction is 20s. How much time will it take to complete 90% of the reaction?
20. How will you prepare potassium dichromate, $K_2Cr_2O_7$ from chromite ore?
21. Explain the crystal field splitting in octahedral complexes with the help of diagram.
22. Using Hinsberg reagent how will you distinguish between 1^0, 2^0 and 3^0 amines? Also write the chemical equations involved.

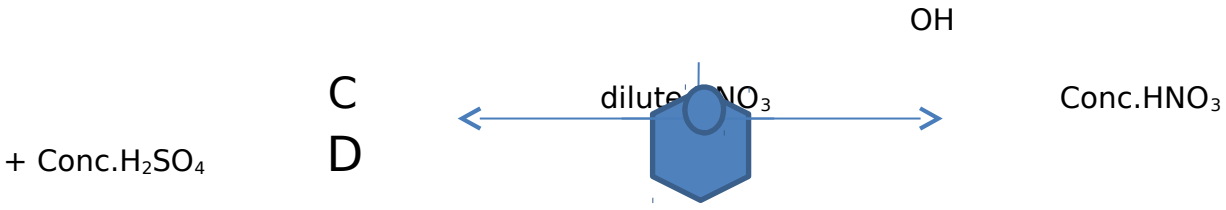
23. Write the differences between S_N^1 and S_N^2 reactions.
24. How will you prepare the following compounds from Grignard reagent?
    (a) Ethanol
    (b) Propan-2-ol
    (c) 2-methylpropan-2-ol
25. Distinguish between RNA and DNA
26. Identify X, Y and Z in the following chemical reactions.
    (a) $CH_3–CO-CH_3$ $\xrightarrow{Zn\text{-}Hg,\ Conc.HCl}$ X
    (b) $CH_3–CO-Cl + H_2$ $\xrightarrow{Pd\ -\ BaSO_4}$ Y
    (c) $CH_3-COOH + Br_2$ $\xrightarrow{Red\ P}$ Z

Answer any 4 questions from 27 to 31. Each carries 4 scores.
(4 X 4 = 16)

27. Explain ideal and non-ideal solutions with the help of graphs and examples.
28. (a) How do conductivity and molar conductivity vary with dilution of a strong and weak electrolyte.
    (c) Λ^0_m of a weak electrolyte cannot be obtained from Λ_m versus concentration graph. How can you calculate the Λ^0_m of CH_3COOH from CH_3COONa, HCl and NaCl ?
29. Explain the four types of structural isomerism shown by coordination compounds with examples.
30. Explain the following reactions with equations.
    (a) Aldol condensation
    (b) Cannizzaro reaction
31. Complete the following reactions:
    (a)



    (b)



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