RRV GIRLS HIGHER SECONDARY SCHOOL, KILIMANOOR

SECOND YEAR HIGHER SECONDARY PRE MODEL EXAM- 2023

CHEMISTRY

Maximum: 60 Scores

Time: 2 Hours

RRV GIRLS HSS Kilimanoor Cool – off time: 15 Minutes

Answer any Four Questions from 1 to 5 [Each Question Carries 1 score]

1. An example for liquid in solid type solution is_____
2. The general electronic configuration of d-block elements is_____
3. What is the Co-ordination number of Co in $[Co(NH_3)_6]Cl_3$
4. A reaction is first order in A and second order in B.Write the differential rate equation for the reaction.
5. Identify the Compound which cannot give positive iodoform reaction
   - **a.** CH_3 CHO
   - **b.** CH_3CH_2 OH
   - **c.** $CH_3CH(OH)-CH_3$
   - **d.** $CH_3CH_2COCH_2CH_3$

Answer any Eight Questions from 6 to 15 [Each Question Carries 2 score]

6. What is Henry's law . Write its applications.
7. Describe the method of preparation of KMnO4 from Pyrolusite Ore.
8. How can you distinguish b/w 1^0, 2^0, 3^0 alcohols.
9. Give the IUPAC name of the following compounds.
   - **i.** $[Cr(H_2O)_6]Cl_3$
   - **ii.** $K_4[Fe(CN)_6]$
10. Calculate Vant Hoff factor for (a) $CaCl_2$ (b) KCl
11. What is pseudo first order reaction. Write an example.
12. Arrange the following substances in the increasing order of their basic

strength. (Methylamine, Dimethyl amine, Trimethylamine , Aniline)

13. Write Nernst equation for galvanic cell and explain the terms.

14 What are the hydrolysis product of Sucrose and Lactose ?

15. Identify the Product A & B

a. CH_3-CHO + CH_3Mg Br ——A►----H_2O------>B

b. CH_3-- CH_2OH $SOCl_2$. A Alc KOH>B

Answer any Eight Questions from 16 to 26 [Each Question Carries 3 score]

16 a. Derive the integrated Rate equation for Zero order reaction.

b. The unit of rate constant for a zero order reaction is _____

17. 18g of glucose is dissolved in 1kg of water. At what temp. will water boil at 1.013 bar. Kb for water is 0.52 K kg/mol.

18. What is Lanthanide contraction and write its consequences.

19. [Ni $(CO)_4$]has tetrahedral geometry whereas [Ni $(CN)_4]^{2-}$ has square planar geometry. Explain why??

20. A first order reaction is 40% complete in 50 minutes . Calculate the value of rate constant. In how much time will the reaction be 80% complete?

21. a.Complete the following

$2CH_3Cl$+ 2Na dryether ?

b.What is Grignard reagent.

c.Define Diazotization.

22. a.State Kohlrausch's law of independent migration of ions.

b. Limiting molar conductivity for NaCl, HCl & NaAc are 126.4, 425.9 91.0 Scm^2/mol resp.

λ Calculate ^0m for HAc

23. How will you Convert.

a. Ethanoic acid to Propanoic acid

b. Propanone to Propane.

c. Toluene to benzoic acid.

24. a. Explain Aldol condensation taking an example.

b. What is cross aldol condensation.

25. Give two tests to distinguish b/w aldehyde & Ketone. Explain.

26. a. What is denaturation of Protein

b. Differentiate b/w Nucleoside & Nucleotide.

Answer any Four Questions from 27 to 31 [Each Question Carries 4 score]

27. a.Draw the structures of the various isomers of the complex ion

$[Co(en)_2\ Cl_2\ ]^+$

b.What do you understand by Spectrochemical series.

28. a.Explain why haloarenes are less reactive towards nucleophilic substitution reaction.

b.How can you prepare Chlorobenzene from aniline

29. a. Explain the working of H_2-O_2 fuel cell.

Write the anode reaction, cathode reaction and overall reaction.

b. Write any two advantages of fuel cell

30. a. Explain the following.

A. Reimer Tiemann Reaction

B. Williamson's Synthesis

b. Write the structure of Aspirin

31. Complete the following table

Sl.no.	Reactant	Reagent	Organic Product	Name of reaction
1	C_6H_6	$C_6H_5COCl/AlCl_3$	----------	----------
2	CH_3-CH_2-COOH	Cl_2/P	----------	----------
3	$C_6H_5COCH_3$	----------	----------	Wolff Kishner reaction

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