

A. Answer any 4 questions from 1 to 5. Each carries 1 score**(4x1=4)**

1. Metal present in chlorophyll is
2. Which is the poisonous gas formed by the oxidation of chloroform?
3. The cell used in electronic watches is
4. Which of the following compounds answers Tollens test?
(a. Propanone b. Ethanal c. Ethanol d. Butanone)
5. The mild oxidising agent used to convert 1^o alcohol to aldehyde is

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

6. What are the ideal and non ideal solutions? Give examples.
7. Differentiate between primary cells and secondary cells
8. a) What is Arrhenius equation?
b) Write any 2 factors affecting the rate of reaction.
9. Why do transition metals form coloured compounds?
10. Write the IUPAC name of following co-ordination compounds
a) [Co(NH₃)₄ Cl₂]Br
b) K₂[HgI₄]
11. Complete the reaction
a) CH₃-CH₂-Br $\xrightarrow{\text{Na/dry ether}}$ _____
b) Name the above reaction.
12. Write a test to distinguish between 1^o, 2^o and 3^o alcohols
13. Arrange the following compounds in increasing order of acidity. Justify.
HCOOH, CH₃COOH, Cl-CH₂COOH
14. What happens when aniline is treated with Br₂ water?
15. What is meant by denaturation of proteins?

C. Answer any 8 questions from 16 to 26. Each carries 3 score

16. Which types of deviation is shown by acetone - CHCl₃ mixture. Draw the vapour pressure - mole fraction graph.
17. Represent the cell for the cell reaction

$$\text{Zn} + 2 \text{Ag}^+_{(\text{Aq})} \longrightarrow \text{Zn}^{2+}_{(\text{Aq})} + 2\text{Ag}_{(\text{S})}$$

$$0.1 \text{ M} \qquad \qquad 0.01 \text{ M}$$

Calculate E_{Cell} E_{Zn²⁺/Zn}⁰ = -0.76v
 E_{Ag⁺/Ag}⁰ = +0.8 v
18. Calculate the osmotic pressure exerted by a solution prepared by dissolving 1g of polymer of molecular mass 1,65,000 in 500 ml water at 27^oc.
19. a) What is spectrochemical series?
b) Draw the energy level diagram for crystal field splitting of octahedral complexes.

20. Write the expression for rate constant of first order reaction. Derive the expression for half life of first order reaction.
21. a) State Kohlrausch's law.
 b) Find λ_m^0 $\text{CH}_3\text{COONa} = 91 \text{ Scm}^2\text{mol}^{-1}$
 $\lambda_m^0\text{HCl} = 426 \text{ Scm}^2\text{mol}^{-1}$
 $\lambda_m^0\text{NaCl} = 126.4 \text{ Scm}^2\text{mol}^{-1}$
22. Explain the following reactions
 a) Reimer – Teimann Reaction
 b) Williamson Synthesis
23. a) Why Vitamin C cannot be stored in our body?
 b) Write any two difference between RNA and DNA
24. Identify the product A in the following reactions
 i) $\text{CH}_3\text{CHO} \xrightarrow[\text{ii) H}_2\text{O}]{\text{i) CH}_3\text{MgBr}}$ A
 ii) $\text{CH}_3\text{-CH}_2\text{OH} \xrightarrow{\text{SOCl}_2}$ A
 iii) $\text{C}_6\text{H}_5\text{N}_2\text{Cl} \xrightarrow[\text{Warm}]{\text{H}_2\text{O}}$ A
25. What is Hinsberg reagent? How will you distinguish $1^0, 2^0$ and 3^0 amines using this reagent?
26. Explain
 a) HVZ Reaction
 b) Gatterman - Koch reaction

D. Answer any 4 questions from 27 to 31. Each carries 4mark.

27. a) Distinguish between order and molecularity of a reaction.
 b) A first order reaction is 35% complete in 40 minutes. Calculate the value of rate constants.
28. Explain the preparation of potassium dichromate from chromite ore. Write one use of $\text{K}_2\text{Cr}_2\text{O}_7$.
29. Identify the major products in the following reaction.
 a) $\text{CH}_3\text{-}\overset{\text{Br}}{\text{CH}}\text{-CH}_2\text{-CH}_2\text{-CH}_3 \xrightarrow[\text{heat}]{\text{Alcoholic KOH}}$ _____
 b) State the rule behind this reaction.
30. Explain the different types of structural isomerism in co-ordination compounds with examples.
31. How does $\text{CH}_3\text{-CHO}$ reacts with following reagent.
 a) HCN
 b) dilute NaOH
 c) Zn (Hg) / Conc. HCl
 d) LiAlH_4

Prepared By

1. Shylaja.S (412602)
VBHSS Thrissur (08048)
2. RekhaNair.L (412570)
VBHSS Thrissur (08048)
3. Preetha P (412554)
VBHSS Thrissur (08048)
4. Jansamma John (210705)
Santha HSS Avanur (08047)
5. SmithaDevassy
St.Joseph EMHSS, Eravu (08104)
6. Jincy P George (698464)
VBHSS Thrissur (08048)
7. JijiJames.E (412727)
Santha HSS Avanur (08047)
8. LishiSoman.P (694304)
SDVHSS Peramangalam (08173)
9. Dinu Davis (772994)
HSS Arimpur (08179)