

Class : 12

Register
Number**SECOND MID TERM TEST - 2024**

Time Allowed : 1.30 Hours]

CHEMISTRY

[Max. Marks : 50

PART - I

- (i) Answer all the questions.
(ii) Choose the correct answer.

10x1=10

- Oxidation state of Iron and the charge on the ligand NO in $[\text{Fe}(\text{H}_2\text{O})_5\text{NO}]\text{SO}_4$ are
 - +2 and 0 respectively
 - +3 and 0 respectively
 - +3 and -1 respectively
 - +1 and +1 respectively
- Which type of isomerism is exhibited by $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$?
 - Coordination isomerism
 - Linkage isomerism
 - Optical isomerism
 - Geometrical isomerism
- Which of the following is paramagnetic in nature?
 - $[\text{Zn}(\text{NH}_3)_4]^{2+}$
 - $[\text{Co}(\text{NH}_3)_6]^{3+}$
 - $[\text{Ni}(\text{H}_2\text{O})_6]^{2+}$
 - $[\text{Ni}(\text{CN})_4]^{2-}$
- During electrolysis of molten sodium chloride, the time required to produce 0.1 mole of chlorine gas using a current of 3A is
 - 55 minutes
 - 107.2 minutes
 - 220 minutes
 - 330 minutes
- Which of the following electrolytic solution has the least specific conductance
 - 2N
 - 0.002N
 - 0.02N
 - 0.2N
- Which electrolyte is used in Leclanche cell?
 - $\text{ZnSO}_4 + \text{CuSO}_4$
 - $\text{NH}_4\text{Cl} + \text{ZnCl}_2$
 - $\text{NaCl} + \text{CuSO}_4$
 - $\text{MnSO}_4 + \text{MnO}_2$
- When aniline reacts with acetic anhydride the product formed is
 - o - aminoacetophenone
 - m-aminoacetophenone
 - p - aminoacetophenone
 - acetanilide
- Which of the following amines does not undergo acetylation?
 - t - butylamine
 - Ethylamine
 - Diethylamine
 - Triethylamine
- Which of the following reagent can be used to convert nitrobenzene to aniline
 - Sn / HCl
 - Zn Hg / NaOH
 - Zn/NH₄Cl
 - All of these
- Which one given below is a non-reducing sugar?
 - Glucose
 - Sucrose
 - Maltose
 - Lactose.

KK/M/12/Che/1

PART-II

II. Answer any 5 questions. Question No. 18 is compulsory

5x2=10

11. Define Ligands.
12. What is Crystal field stabilization energy (CFSE) ?
13. State Kohlrausch Law.
14. Define equivalent Conductance.
15. Write a note on Diazotisation reaction?
16. Write the Zwitter ion structure of alanine.
17. How are vitamins classified.
18. Identify A and B $\text{CH}_3\text{NO}_2 \xrightarrow{\text{Sn/HCl}} \text{A}$ $\text{CH}_3\text{NO}_2 \xrightarrow{\text{Zn/NaOH}} \text{B}$

PART-III

III. Answer any 6 questions. Question No. 26 is compulsory

5x3=15

19. What are Hydrate Isomers? Explain with an example.
20. State Faraday's Laws of electrolysis.
21. Write a note on sacrificial protection.
22. What is Chloropicrin? How is it prepared and its use?
23. Give short notes on Gabriel phthalimides synthesis?
24. Difference between DNA and RNA.
25. Write a short note on peptide bond.
26. Write the IUPAC name, oxidation number, coordination number, magnetic property for $\text{K}_4[\text{Mn}(\text{CN})_6]$

PART - IV

IV. Answer ALL the questions.

3x5=15

27. a) Write the postulates of Werner's theory. (OR)
 - b) Based on VB theory explain why $[\text{Cr}(\text{NH}_3)_6]^{3+}$ is paramagnetic, while $[\text{Ni}(\text{CN})_4]^{2-}$ is diamagnetic.
 28. a) Derive an expression for Nernst equation. (OR)
 - b) Describe the construction of Daniel cell. Write the cell reaction.
 29. a) How will you distinguish between primary secondary and tertiary Aliphatic Amines.
- (OR)
- b) Explain the Structure of Glucose.

KK/M/12/Che/2