SECOND MID TERM TEST - 2024

Standard XII

Reg.No. 0 1 2 5 0 8

CHEMISTRY

Time : 1.30 hrs | Marks : 50

Part - I

I. Choose the correct answer: 10 x 1 = 10

1. A magnetic moment of 1.73 BM will be shown by one among the following
   a) $TiCl_4$ b) $[CoCl_6]^{4-}$ c) $[Cu(NH_3)_4]^{2+}$ d) $[Ni(CN)_4]^{2-}$
2. Which type of isomerism is exhibited by $[Pt(NH_3)_2 Cl_2]$?
   a) coordination isomerism b) linkage isomerism
   c) optical isomerism d) geometrical isomerism
3. The number of electrons that have a total charge of 9650 coulombs is
   a) 6.22×10^{23} b) 6.022×10^{24} c) 6.022×10^{22} d) 6.022×10^{-34}
4. Which of the following electrolytic solution has the least specific conductance?
   a) 2 N b) 0.002 N c) 0.02 N d) 0.2 N
5. Assertion : Pure iron when heated in dry air is converted with a layer of rust.
   Reason : Rust has the composition Fe_3O_4
   a) If both assertion and reason are true and reason is the correct explanation of assertion
   b) If both assertion and reason are true and reason is not the correct explanation of assertion
   c) Assertion is true but reason is false
   d) Both assertion and reason are false
6. Fog is colloidal solution of
   a) solid in gas b) gas in gas c) liquid in gas d) gas in liquid
7. Adsorption of a gas on solid metal surface is spontaneous and exothermic then
   a) ΔH increases b) ΔS increases c) ΔG increases d) ΔS decreases
8. Which one of the following will not undergo Hofmann bromamide reaction?
   a) $CH_3 CO NH CH_3$ b) $CH_3 CH_2 CO NH_2$
   c) $CH_3 CO NH_2$ d) $C_6H_5 CO NH_2$
9. The product formed by the reaction and aldehyde with a primary amine
   a) Carboxylic acid b) Aromatic acid
   c) Schiff's base d) Ketone
10. Which of the following amines does not undergo acetylation?
    a) t - butylamine b) ethylamine
    c) diethylamine d) triethylamine

Part - II

II. Answer any 5 questions. (Q.No.18 is compulsory) 5 x 2 = 10

11. What is crystal field stabilization energy?
12. State Kohlrausch law.
13. Why is AC current used instead of DC in measuring the electrolytic conductance?
14. Give the important characteristics of physisorption.
15. Write a short note on mustard oil reaction.
16. Write any two hydrate isomers of the complex with the molecular formula $CrCl_6.6H_2O$

17. Write a note on catalytic poison.
18. A copper electrode is dipped in 0.1 M copper sulphate solution at 25°C. Calculate the electrode potential of copper. (Given $E^{\circ}_{Cu^{2+}/Cu} = 0.34V$)

Part - III

III. Answer any 5 questions. (Q.No.26 is compulsory) **5 x 3 = 15**

19. What are the limitations of VB Theory?
20. In an octahedral crystal field, draw the figure to show splitting of 'd' orbitals.
21. Write a note on Sacrificial protection.
22. List the factors affecting electrolytic conductance.
23. What are the general characteristics of a catalyst?
24. Write a short note on Electro osmosis.
25. How is chloropicrin prepared?
26. CH_3CN —(Sn/HCl, 6[H])→ A; —(Zn/NH_4Cl, 4[H])→ B. Identify A and B.

Part - IV

IV. Answer all the questions. **3 x 5 = 15**

27. a) Write the postulates of Werner's Theory.

(OR)

b) i) Calculate the magnetic moment and magnetic property of $[CoF_6]^{3-}$
ii) What is crystal field splitting energy?

28. a) Derive an expression for Nernst equation.

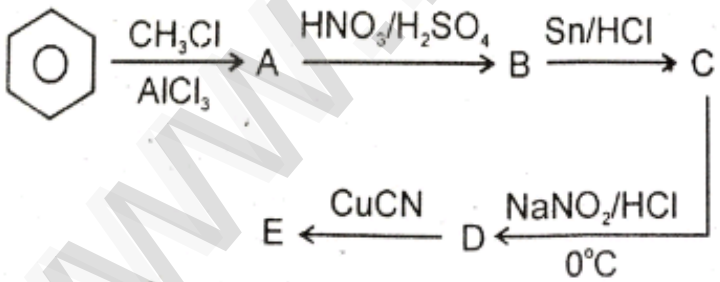
(OR)

b) Describe the construction of Daniel cell. Write the cell reactions.

29. a) Differentiate physisorption and chemisorption.

(OR)

b) Identify A to E in the following reaction.



P. JEEVARATHINAM
XII - "E"

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