



JAIN COLLEGE

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Bangalore - 560 098

Date:

SUBJECT: CHEMISTRY

**II PUC
Mock paper II**

Timings Allowed: 3 Hrs 15 Minutes

Total Marks: 70

PART A

I. Answer the following.

1 X 10 = 10

1. What happens to the solubility of a gas when the temperature is decreased?
2. What is the oxidation state of 'Ni' in the compound $[\text{Ni}(\text{CO})_4]$?
3. Write the IUPAC name of $\text{CH}_2=\text{CHCH}_2\text{Br}$.
4. Which is the zeolite catalysed used in petroleum industry?
5. What is kraft's temperature?
6. What type of ore is concentrated by froath floatation method?
7. What happens to the conductivity of a solution when it is diluted?
8. What is the unit of magnetic moment?
9. What is the IUPAC name of isoprene?
10. Name one natural semipermeable membrane.

PART B

II. Answer any FIVE of the following.

2 X 5 = 10

11. Explain decarboxylation reaction with example.
12. Differentiate between physical and chemical adsorption.
13. Define activation energy. What is the effect of using a catalyst of the same?
14. Mention the conditions to observe Tyndall effect.
15. Transition elements form alloys. Why?
16. Name the product obtained when secondary alcohol is passed over a heated copper catalyst.
Give reaction.
17. What are antacids? Give example.
18. Identify A and B
 $\text{C}_2\text{H}_5\text{Cl} + \text{AgCN} \rightarrow \text{A} \rightarrow \text{B} + \text{AgCl}$

PART C

III. Answer any FIVE of the following.

3 X 5 = 15

19. (a) Explain electrolytic refining of copper.
(b) Among CO and C which acts as reducing agent below 1073K.
20. (a) What are interhalogen compounds?
(b) Mention anomalous properties of nitrogen.
21. Complete the following reactions.
(a) $\text{I}_2 + 2\text{Cl}_2 \rightarrow$
A
(b) $2\text{KClO}_3 \rightarrow 2\text{KCl} + \text{B}$ What are A and B
Heat

22. (a) How dinitrogen is prepared from $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$?
 (b) How is phosphine obtained from calcium phosphide?
23. (a) Differentiate between actinoids and lanthanoids.
 (b) Zn^{2+} and Sc^{3+} are colourless. Why?
24. (a) Only transition elements form co-ordination complexes. Why ?
 (b) Why are d-block elements called transition elements?
25. With the help of VBT explain geometry, hybridization and magnetic property of $[\text{CoF}_6]^{3-}$.
26. (a) What are ambidentate ligands? Give an example.
 (b) Write the IUPAC name of $[\text{Cr}(\text{NH}_3)_3(\text{H}_2\text{O})_3]\text{Cl}_3$.

PART D

IV. ANSWER ANY 3 OF THE FOLLOWING.

5 X 3 = 15

27. (a) Calculate the packing efficiency in BCC lattice.
 (b) Differentiate between crystalline and amorphous solid. (3+2)
28. (a) With the help of graph explain the positive deviation of non-ideal solutions from Raoult's law?
 (b) Define osmotic pressure.
 (c) what are azeotropes? (3+1+1)
29. (a) Calculate emf of the cell represented below
 $\text{Zn}/\text{Zn}^{2+}(c=0.1\text{M}) \parallel \text{Cu}^{2+}(c=1\text{M}) \parallel \text{Cu}$ at 25°C ; Given $E^\circ_{\text{Cu}} = +0.34\text{V}$ and $E^\circ_{\text{Zn}} = -0.76\text{V}$.
 (b) What is rusting? How it can be prevented? (3+2)
30. (a) For a 1 order reaction show that time required for the completion of 99% of the reaction is twice the time required for the 90% of the reaction.
 (b) Define molecularity of a reaction. (3+2)
31. (a) Explain the mechanism of enzyme catalysis.
 (b) Define sol. Give an example. (3+2)

PART E

V. ANSWER ANY 4 OF THE FOLLOWING.

5 X 4 = 20

32. (a) Explain Sandmeyer's reaction with example.
 (b) Why haloarenes are less reactive towards nucleophilic substitution reaction? Explain. (2+3)
33. (a) Explain the preparation of salicylaldehyde from phenol with reaction.
 (b) How does anisole reacts with HI? (3+2)
34. (a) Explain Cannizaroes reaction with example.
 (b) Explain Etard reaction. (3+2)
35. (a) Among ammonia and aniline which is more basic and why?
 (b) How do you prepare aniline from nitrobenzene?
 (c) Name the final product obtained when ammonia is treated with excess of alkyl halide in a sealed tube. (2+2+1)
36. (a) Write the Harworth structure of sucrose.
 (b) What are disaccharides? Give example.
 (c) What are zwitter ions? (2+2+1)
37. (a) What are elastomers?
 (b) How is Nylon-6,6 prepared?
 (c) How is Teflon prepared? (1+2+2)
