

CHEMISTRY

SAMPLE QUESTION PAPER

Answer any four questions from 1 to 5. Each carries one score.

1. Number of moles of solute per liter of solution is called.....
2. The unit of rate constant for a second order reaction is.....
3. Molecularity of the reaction $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$ is (0,1,2,3,4)
4. The coordination compound used for the treatment of cancer.....
5. 40 percentage solution of formaldehyde is called.....

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

6. What are isotonic solution? Give example.
7. Name four colligative properties.
8. Give any two differences between primary and secondary cell?
9. Distinguish between order and molecularity of a reaction.
10. What is pseudo order reaction? Give one example.
11. Calculate the magnetic moment of Cr^{+3} .
12. Draw the crystal field splitting of tetrahedral complex.
13. Complete the following reaction,



14. What is carbonyl amine reaction?

15. Match the following

| A | B |
|-------------|-----------------|
| Vitamin A | Glucose |
| Starch | Zymase |
| Aldo hexose | Night blindness |
| Enzyme | Amylose |
| | Fructose |

Answer any eight questions from 16 to 25. Each carries 3 score.

16.a) What are ideal solutions? Give an example?

b) Sketch the vapor pressure composition graph for a non ideal solution with negative deviation.

17.a) State Kohlraush's law.

b) Λ_m^0 for NaCl, HCl, and CH_3COONa are 126.4, 425.9 and $91 \text{ S cm}^2 \text{ mol}^{-1}$ respectively. Calculate Λ_m^0 for CH_3COOH .

18. Derive the integrated rate equation for first order reaction.

19.a) Write the IUPAC name of: $\text{K}_4[\text{Fe}(\text{CN})_6]$, $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$

b) Write the formula of the following compound, Tertaamine diaqua Cobalt(III) Chloride

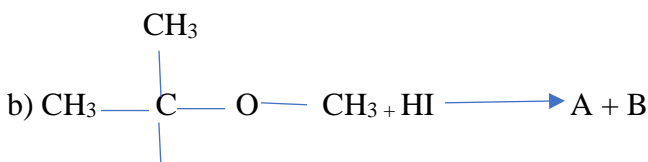
20. Write the equations for the following reactions

a) Wurtz reaction b) Fittig reaction c) Sandmeyer's reaction

21.a) What is Lucas reagent?

b) How can you convert phenol to benzene? Give equation?

22. a) What is Williamson's synthesis?



Identify A and B

23. Write a test to distinguish aldehydes and ketones? Give equation.

24. Explain aldol condensation and Cannizaro reaction.

25. How can you distinguish primary secondary and tertiary amines.

26. Discuss the structure of protein.

Answer any four questions from 27 to 31 each carries 4 score

27. What are fuel cell? Explain the working of $\text{H}_2\text{-O}_2$ Fuel Cell? Give its advantages.

28. Explain the different steps involved in the preparation of potassium dichromate? give the structure of dichromate ion?

29. Discuss the isomers in coordination compounds.

30.a) Distinguish between SN_1 and SN_2 reactions.

b) Give two examples of electrophilic substitution reactions of chlorobenzene.

31. Explain the following reactions with the equation

a) HVZ reaction b) Clemmensen reduction

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