



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**U.G. DEGREE EXAMINATION – ALLIED**

**THIRD SEMESTER – APRIL 2022**

**16/17/18UCH3AL03 – GENERAL CHEMISTRY FOR BIOLOGY-I**

Date: 23-06-2022

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

**PART-A**

*Answer ALL questions.*

**(10 x 2 = 20 marks)**

1. What is retention factor? Mention its significance.
2. Define the term precision.
3. How does the molecular shape of water differ from methane?
4. What are bidentate ligands? Give an example.
5. Write any two criteria required for a primary standard.
6. What are alkaline buffer solutions? Give an example.
7. When does the reaction rate become rate constant of the reaction?
8. Distinguish between homogenous and heterogeneous catalytic reactions.
9. Mention the names of water-soluble vitamins.
10. Illustrate the structure of thyroxin.

**PART-B**

*Answer any EIGHT questions.*

**(8 x 5 = 40 marks)**

11. What are the precautions to be made to store chemicals in cabinet and shelf?
12. Explain the principle of column chromatography technique.
13. Illustrate types of error and methods to eliminate them.
14. Describe the hydrogen bonding involved in acetic acids and nucleic acids.
15. Explain the geometrical isomerism of square planar complexes.
16. Draw the structure and mention the functions of hemoglobin.
17. Explain the principle of volumetric analysis.
18. Derive the Henderson-Hasselbalch equation. Mention its significances.
19. What are the characteristic features of a catalytic reaction?
20. Distinguish between order and molecularity of a reaction.
21. Describe the composition of fats with illustration.
22. Discuss the biological importance of hormones.

**PART-C**

*Answer any FOUR questions.*

**(4 x 10 = 40 marks)**

23. Discuss the guidelines for grouping and storing chemicals?
24. Explain the following. (5+5)
  - a) Stationary phase and mobile phase
  - b) Chromatogram of paper and TLC

25. a) Write postulates of Werner's theory of coordination compounds. (5)  
b) Explain the crystal structure of NaCl. (5)
26. Explain the methods of expressing the concentration of the solution.
27. a) Derive the first order rate equation. (6)  
b) Mention the criteria required for a catalyst. (4)
28. Explain classification, functions and deficiency disorders of vitamins.

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