

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



**U.G. DEGREE EXAMINATION – ALLIED**

**THIRD SEMESTER – NOVEMBER 2019**

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

Date: 06-11-2019

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

**PART-A**

Answer **ALL** questions.

**(10 x 2 = 20)**

1. What are antidotes? Give an example.
2. Distinguish between accuracy and precision.
3. What causes dipole-dipole interaction?
4. Draw the unit cell of CsCl. Mention its structural information.
5. Differentiate between end point and equivalence point.
6. What are buffer solutions?
7. How can the rate of a reaction be expressed?
8. Give an example for homogenous and heterogeneous catalytic reactions.
9. Write the structure of thyroxin.
10. Mention the names of water soluble vitamins.

**PART-B**

Answer any **EIGHT** questions.

**(8 x 5 = 40)**

11. Write the steps one should administer as immediate first aid to an injured or exposed personnel in the laboratory?
12. Explain the basic principle of paper chromatography.
13. What are systematic and random errors? Give an example for each.
14. Explain the factors influencing the formation of ionic bonds.
15. Explain the hybridization and geometry of the following molecules i)  $\text{NH}_3$  ii)  $\text{CH}_4$ .
16. Draw the structure of chlorophyll and explain its function.
17. Enumerate the criteria required for a primary standard.
18. Discuss the action of buffer solution in maintaining the pH of a solution.
19. Define and differentiate between homogeneous and heterogeneous catalysis.
20. Give a comparative account on the terms order and molecularity.
21. Describe the composition of fats.
22. Explain the biological functions of thyroxin.

## PART-C

Answer any **FOUR** questions.

(4 x 10 = 40)

23. Discuss the guidelines for grouping and storing chemicals in the laboratory.
24. a) How is thin layer chromatography used to separate non-volatile mixtures? (5)  
b) Explain the crystal structure of sodium chloride. (5)
25. a) Describe the hydrogen bonding involved in (i) acetic acid (ii) nucleic acids. (5)  
b) Write the postulates of Werner's theory of coordination compounds. (5)
26. a) Describe any three methods of expressing concentrations. (6)  
b) Discuss the significance of Henderson-Hasselbach equation. (4)
27. a) Derive the first order rate equation. (6)  
b) What are the characteristics of a catalyst? (4)
28. a) Enumerate the source and the significance of fat soluble vitamins. (6)  
b) Discuss the biological role of Adrenaline. (4)

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