



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

**U.G. DEGREE EXAMINATION – ALLIED**

**THIRD SEMESTER – NOVEMBER 2022**

**18UCH3AL03 – GENERAL CHEMISTRY FOR BIOLOGY-I**

Date: 01-12-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

**PART - A**

**Answer ALL questions.**

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

1. What are antidotes? Give an example.
2. What are carcinogens? Give two examples.
3. Why is the boiling point of acetic acid higher than propan-1-ol?
4. What is meant by dipole-dipole interaction? Give an example.
5. Distinguish between the terms, end point and equivalence point.
6. State the principle of volumetric analysis.
7. Give an example for homogenous and heterogeneous catalytic reactions.
8. Distinguish between order and molecularity of a chemical reaction.
9. Draw the structure of adrenaline.
10. Differentiate between molarity and normality.

**PART - B**

**Answer any EIGHT questions.**

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

11. What are the precautions required in handling hazardous chemicals?
12. Explain the column chromatography technique.
13. How is paper chromatographic separation carried out?
14. Explain the factors influencing the formation of ionic bonds.
15. What are the postulates of Werner's theory? Explain.
16. Discuss the optical isomerism present in octahedral complexes.
17. How is concentration of solution expressed in terms of i) molality and ii) ppm?
18. Enumerate the criteria required for a primary standard.
19. Explain the factors affecting the rate of a reaction.
20. Derive the expression for first order rate constant.
21. What are the importance of vitamin D and K?
22. Discuss the structure and functions of estrogen.

## PART C

Answer any *FOUR* questions.

(4 x 10 = 40 Marks)

23. Explain the following terms: (a) stationary phase, (b) mobile phase, and (c) development of chromatogram.
24. Explain in detail the crystal structure i) CsCl ii) NaCl.
25. a) Describe the hydrogen bonding involved in (i) acetic acid (ii) nucleic acids.  
b) Discuss the geometrical isomerism of octahedral complex with examples.
26. a) Derive Henderson equation for an acidic buffer. Mention its applications  
b) What is molarity? Calculate the molarity of 4 g of sodium hydroxide in 1000 mL of water.
27. Derive an expression for the rate constant of a second order reaction of the type  $2A \rightarrow$  product.
28. a) What are vitamins? How are they classified?  
b) Define saponification. Explain it with an example.

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