



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – ADVANCED ZOOLOGY AND PLANT BIOLOGY

FIRST SEMESTER – NOVEMBER 2018

CH 1100 – CHEMISTRY FOR BIOLOGISTS - I

Date: 24-10-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

Part-A

Answer ALL questions.

(10 × 2= 20)

1. What is precision of a measurement?
2. Mention any two adsorbents used in column chromatography.
3. What is meant by dipole-dipole interaction?
4. Write the factors that influence the formation of an ionic bond.
5. Calculate the pH of 0.001M HCl.
6. What is buffer solution? Cite an example.
7. State the rate law.
8. What are heterogeneous catalysts? Give an example.
9. Give the structure of vitamin E.
10. Write the functions of thyroxin.

Part-B

Answer any EIGHT questions.

(8 × 5= 40)

11. Write general rules observed in the storage and handling of chemicals.
12. Define the following terms i) retention factor ii) accuracy.
13. Discuss the principle of thin layer chromatographic technique.
14. Explain the crystal structure of CsCl.
15. What are the postulates of Werner's theory of coordination compounds?
16. Predict the hybridization and geometry of the following molecules i) H₂O ii) CH₄.
17. What are the requirements of a primary standard?
18. Derive the Henderson equation.
19. Write the differences between order and molecularity of a chemical reaction.
20. Describe the role of enzymes in biological systems and industries.
21. Define the term 'saponification'. Explain it with an example.
22. Write the functions of adrenaline and androgens.

Part-C

Answer any FOUR questions.

(4 × 10= 40)

23. Explain the different types of error. How can they be minimized?
24. a) How is paper chromatographic separation carried out?

b) Discuss the types of hydrogen bonding with suitable examples. (5+5)

25. a) Write the biological functions of haemoglobin and chlorophyll.

b) Describe the geometrical isomerism exhibited by square planar complexes. (5+5)

26. a) Explain the following terms: i) ionic product of water ii) normality and iii) molarity.

b) Write the differences between end point and equivalence point. (6+4)

27. Derive an expression for the rate constant of a second order reaction of the type

$2A \rightarrow \text{Product}$.

28. What are vitamins? How are they classified? Give the functions of vitamin C and vitamin E.

(2+5+3)
