



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

FIRST SEMESTER – APRIL 2014

CH 1100 - CHEMISTRY FOR BIOLOGISTS - I

Date : 28/03/2014

Dept. No.

Max. : 100 Marks

Time : 09:00-12:00

Part-A

Answer all the questions. Each question carries two marks.

1. What is universal antidote?
2. Define R_f value and mention its significance.
3. Differentiate between double salts and coordination compounds.
4. What is hybridisation? Give an example.
5. Define normality of a solution.
6. What are buffer solutions?
7. What are catalytic poisons? Give an example.
8. Define rate law of a chemical reaction
9. Distinguish between oil and fat.
10. How do hormones differ from vitamins?

Part-B

Answer any eight questions. Each question carries five marks.

11. Mention any five important first aid techniques adopted in the chemical laboratory.
12. Explain the various types of determinate errors.
13. Define van der Waals forces. How are they classified? Give any two significances of van der Waals Forces.
14. Discuss the crystal structure of potassium chloride.
15. What is covalent bond? Explain the hybridization and geometry of methane molecule.
16. Discuss the geometrical isomerism of octahedral complexes.
17. Explain the principle of volumetric analysis
18. Explain the action of a basic buffer.
19. Derive an expression for rate constant of first order reactions.
20. Write a note on enzyme catalysis.
21. What are fats? Write about their occurrence and composition.
22. Briefly discuss the functions of adrenaline.

Please go on to the next page

Part-C

Answer four questions. Each question carries ten marks.

- 23a. Distinguish adsorption from partition chromatographic technique.
- b. Explain the principle and applications of thin layer chromatography. (5+5)
- 24a. Explain the postulates of Werner's theory.
- b. Explain optical isomerism of square planar complexes. (5+5)
- 25a. Mention the importance of hydrogen bonding in polyamides and nucleic acids.
- b. Derive Henderson equation and mention its significance. (5+5)
- 26a. What is ionic product of water?
- b. Bring out the differences between homogeneous and heterogeneous catalysis with suitable examples. (4+6)
27. Explain the following: (a) primary and secondary standards and (b) order and molecularity of reactions (5+5)
- 28a. Explain the structure and functions of vitamin A and K.
- b. Explain inter- and intramolecular hydrogen bonding with suitable examples. (5+5)
