LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

U.G. DEGREE EXAMINATION – **ALLIED**

FIRST SEMESTER – **NOVEMBER 2024**

CH 1100 – CHEMISTRY FOR BIOLOGISTS - I

Date: 22-11-2024 Dept. No. Max. : 100 Marks

Time: 01:00 pm-04:00 pm

SECTION A

Answer ANY FOUR of the following **4 x 10 = 40 Marks**

1. Discuss the different methods of eliminating and minimizing errors.
2. Describe the different types of errors encountered in analytical measurements.
3. Explain the factors influencing the formation of ionic bond.
4. Discuss the hybridization and geometry of the following molecules:
   (i) CH_4 (ii) NH_3 (iii) H_2O.
5. (a) What are buffer solutions? Discuss the action of acidic buffers. (5)
   (b) Explain the principle of volumetric analysis.
6. Derive the expression for first order rate constant.
7. (a) Name any two biologically and industrially relevant enzymes and mention their actions. (5)
   (b) What are the biological importance of vitamin D and K? (5)
8. How is hydrolysis of fats carried out? Explain.

SECTION B

Answer ANY THREE of the following **3 x 20 = 60 Marks**

9. (a) Explain the principle and applications of paper chromatography. (10)
   (b) Discuss the different methods of safe handling and storage of chemicals. (10)
10. (a) Discuss the crystal structure of NaCl. (10)
    (b) Explain the structure and functions of haemoglobin and chlorophyll. (10)
11. (a) Write the postulates of Werner's theory of coordination compounds. (10)
    (b) Discuss the geometrical and optical isomerism in octahedral complexes with suitable examples. (10)
12. (a) Derive Henderson-Hasselbalch equation. Mention its significance. (10)
    (b) What are primary and secondary standards solutions? Give examples. (10)
13. (a) Discuss Michaelis-Menten mechanism and the kinetics of enzyme catalyzed reactions. (10)
    (b) Explain homogenous and heterogeneous catalysis with suitable example. (5)
    (c) Differentiate order from molecularity. (5)
14. (a) What are vitamins? How are they classified? (10)
    (b) What are vegetable fats and animal fats? Explain with examples. (10)
