LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **PLANT BIOLOGY & ADV. ZOOLOGY**

FIRST SEMESTER – NOVEMBER 2012

# CH 1100 - CHEMISTRY FOR BIOLOGISTS - I

Date : 03/11/2012 Dept. No. Max. : 100 Marks

Time : 1:00 - 4:00

**Part – A**

*Answer* ***all*** *the questions:* (10 × 2 = 20)

1. Define relative error.
2. Why TLC is superior to paper and column chromatography?
3. What are adsorbents? Give an example.
4. What is intermolecular hydrogen bonding? Give an example.
5. What is dipole – dipole interaction?
6. What are hormones?
7. Define normality?
8. What is enzyme catalyst?
9. Give the source and deficiency of vitamin A.
10. Draw the structure of vitamin E.

**Part – B**

*Answer any* ***eight*** *questions:*  (8 × 5 = 40)

1. Mention five points of handling of acids.
2. Explain the factors affecting Rf value.
3. Discuss the crystal structure of CsCl.
4. What are the factors involving the formation of ionic bond?
5. Discuss the hybridization and geometry of CH4 and H2O.
6. List the postulates of Werner’s theory.
7. Discuss the geometrical isomerism of octahedral complexes.
8. Give the difference between molecularly and order.
9. Discuss the occurrence and composition of fats.
10. What is the biological effects and thyroid hormones?
11. Explain the mechanism of acid buffer.
12. What are secondary standard solutions and how are they standardised?

**Part – C**

*Answer any* ***four*** *questions:* (4 × 10 = 40)

1. What are the prerequisites for choosing adsorbents?
2. Describe the three types of adsorbents with suitable example.
3. a) Discuss the optical isomerism of octahedral complexes.(7)

b) What are polydentate ligands? Give an example. (3)

1. a) What is rate law? Derive the rate expressions for I order reactions.(5)

b) What are the prerequisites for the preparation of primary standard solutions?(5)

1. What is catalyst? Explain homogeneous and heterogeneous catalyst with suitable example.
2. Explain in detail the structure and function of vitamin A, C, D, K and E.

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