LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – **NOVEMBER 2012**

# CH 3104 - CHEMISTRY FOR BIOLOGISTS - I

Date : 07/11/2012 Dept. No. Max. : 100 Marks

Time : 9:00 - 12:00

SECTION – A

Answer all the questions: 10 × 2 = 20

1. Mention any four important properties of ionic compounds.
2. Define molarity.
3. What is the biological significance of hemoglobin?
4. What is a buffer solution?
5. State rate law.
6. Give any two examples for zero order reaction.
7. What are lyophilic colloids? Give an example.
8. Mention two applications of colloids in medicine.
9. How is nylon-6,6 prepared?
10. Draw the resonance structure of aniline.

SECTION – B

Answer any eight questions: 8 × 5 = 40

1. Write a note on dipole-induced dipole interaction.
2. Explain the various factors affecting the formation of ionic bond.
3. Describe the geometrical isomerism in square planar complexes.
4. Calculate the normality and molarity of a solution of H2SO4 containing9.8 g/l.
5. Explain the buffer action using acidic buffer.
6. Differentiate homogeneous catalysis from heterogeneous catalysis.
7. Derive an expression for the first order rate equation.
8. What is electro osmosis?
9. Explain coagulation?
10. Explain the types of polymerization with an example for each.
11. How will you convert natural rubber into hard rubber?
12. What is mesomeric effect? Explain.

SECTION – C

Answer any four questions: 4 X 10 = 40

1. a) Draw the crystal structure of NaCl and explain.

b) What is meant by hybridisation? (6+4)

1. What are primary and secondary standard solutions? Explain the important characteristics of a primary standard solution.
2. a) Explain Michaelis - Menten equation.

b) What are catalytic poisons? (8+2)

1. Explain the optical and kinetic properties of colloids.
2. a) Describe the optical isomerism exhibited by tartaric acid.

b) What are polydentate ligands? Give an example. (7+3)

1. a) Mention the differences between HDPE and LDPE

b) What are homo and co polymers? Give an example for each type. (5+5)