LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **CHEMISTRY**

SECOND SEMESTER – **APRIL 2012**

# CH 2102 - GENERAL CHEMISTRY FOR PHYSICS & MATHS

Date : 23-04-2012 Dept. No. Max. : 100 Marks

Time : 9:00 - 12:00

## *Part – B*

*Answer* ***ALL*** *questions*. (10 × 2 = 20 marks)

1. Why do transition elements show variable valencies?
2. Mention the biological importance of Chlorophyll.
3. Define inductive effect with an example.
4. Draw the optical isomers of tartaric acid.
5. State Raoult’s law.
6. Draw the structure of testosterone.
7. What is an auto catalyst? Give an example.
8. Mention the uses of Buna-S rubber.
9. What is meant by hyper thyroidism?
10. How will you prepare polyethylene?

## *Part – B*

*Answer any* ***EIGHT*** *questions*. (8 × 5 = 40 marks)

1. Draw the geometrical isomers exhibited by square planar complexes.
2. Calculate EAN of the metal ion in the following complexes.

i) ) [Co(NH3)6] 2+ ii) ) [Fe(CN) 6]4-

1. Explain the SN1 mechanism of alkyl halides.
2. Why phenol is more acidic than ethyl alcohol?
3. How will you distinguish between maleic and fumaric acids?
4. Describe Beer – Lambert’s law.
5. Mention any five characteristics of a catalyst.
6. Write a note on following:
7. Activation energy b) Grotthus Drapper’s law.
8. Explain the replication of DNA.
9. List the application and risks of genetic engineering.
10. Discuss chain growth and step growth polymerization.
11. Give the synthesis of PET and give its uses.

**Part-C**

*Answer any* ***FOUR*** *questions*. (4 × 10 = 40 marks)

1. a) How is hardness of water determined using EDTA?

b) What is a bidentate ligand? Give an example. (7+3)

1. a) Discuss the optical isomerism exhibited by octahedral complexes.

b)Write Friedel Crafts alkylation reaction with mechanism. (6+4)

1. a) Explain the conformational isomers of n-butane.
2. How will you determine the pH of a solution by glass electrode?
3. Derive an expression for the rate constant of a second order reaction involving two different reactants.
4. a) Compare thermal and photochemical reaction. b) Give equation for the preparation of following

i) PVC ii) Buna-S (6+4)

28. a) How is poly acrylate synthesized? Mention its uses.

b) Explain the Galvanization method of prevention of corrosion. (5+5)

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

$$$$$$$