LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

SECOND SEMESTER – **APRIL 2012**

# CH 207 / 209 – GENERAL CHEMISTRY II

Date : 16-04-2012 Dept. No. Max. : 100 Marks

Time : 1:00 - 4:00

**Part A**

Answer **ALL** questions: (10 x 2 = 20 Marks)

1. What are semiconductors?
2. How are ortho and para-nitrophenols separated?
3. What is the product obtained by the nitration of naphthalene?
4. Define chromophores.
5. Draw the structure of aspirin.
6. State I law of thermodynamics.
7. What is the catalyst used in Haber’s process?
8. State Beer Lambert’s law.
9. Define entropy.
10. How is PVC prepared?

**Part B**

Answer any **EIGHT**questions: (8 x 5 = 40 Marks)

1. Differentiate inter and intramolecular hydrogen bonding with examples.
2. Explain lanthanide contraction.
3. Discuss the mechanism of nitration of furan.
4. How is congo red prepared?
5. Discuss the vulcanization of rubber.
6. State Kohlrausch’s law. Give an example.
7. Mention any two applications and any two risks of genetic engineering.
8. Derive rate constant for a first order reaction.
9. How is nickel estimated by photocolorimetry?
10. Explain any two methods of prevention of corrosion.
11. Differentiate homo and heterogeneous catalysis with examples.
12. Explain the replication of DNA with a neat diagram.

**Part C**

Answer any **FOUR** questions: (4 x 10 = 40 Marks)

1. Explain the optical isomerism in square planar and octahedral complexes.
2. What are buffer solutions? Derive an expression for Henderson equation for an acidic buffer.
3. Explain electrophoresis with a suitable diagram.
4. Define steric acceleration and steric hindrance. Explain with an example for each.
5. How are the following prepared?

(i) nylon (ii) terylene (iii) neoprene (iv) PVC

28. Explain in detail the optical isomerism of tartaric acid.

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