ORGANIC CHEMISTRY – II

(Common for B.Sc., Bio-Tech.)

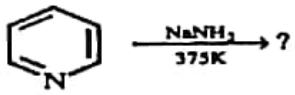
Semester-VI

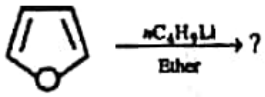
Time Allowed : 3 Hours] [Maximum Marks : 26

Note : The candidates are required to attempt two questions each from Sections A and B carrying 4 marks each and the entire Section C consisting of 5 short answer type questions carrying 2 marks each.

Section - A

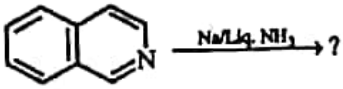
1. (a) Compare the aromatic character of Furna, Pyrrole and Thiophene.
   (b) Complete the following reactions giving mechanism ?

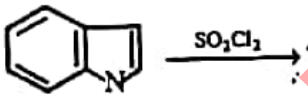
   (i) 

   (ii) 

   (2, 2)

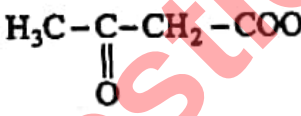
2. (a) Outline the mechanism and steps of synthesis of Iosquinoline by Bischer-Napieralski synthesis.
   (b) Complete the following reactions giving mechanism :

   (i) 

   (ii) 

   (2,2)

3. What are Addition polymers ? Give the preparation and uses of Buna-N and Nylon-610. (2,2)
4. (a) What are Enamines ? Draw the structure of enamine formed between piperidine and cyclopentanone. How will you alkylate it ?
   (b) Starting with Malonic ester how will you synthesize

   (2,2)

Section - B

5. (a) Give evidence to show that Glucose is an aldohexose.
   (b) What is the significance of symbols (+), (–), D, L as used before the names of carbohydrates ? (2,2)
6. What are Polysaccharides ? Discuss briefly the structure of Strach and Cellulose and draw the structures. 4
7. (a) Write a short note on Acidic and Basic characters of Amino acid.
   (b) How will you transform Diethylmalonate of Alanine ? (2,2)
8. (a) Write a short note on Tertiary structure of Proteins. Name different kinds of bonds responsible for formation of tertiary structure of protein.
   (b) Two strands of DNA are not identical but are complementary. Explain. (2,2)

Section - C

9. Write short answer of the following :

(a) Why Benzene undergo electrophilic substitution reactions and Pyridine undergo both Nucleophilic substitution and Electrophilic substitution reactions ?

(b) What is Nylon ? Write an equation for the chemistry involved when a drop of HCl make a hole in a nylon stocking ?

(c) What is the difference between Glycosides and Glucosides ?

(d) How is Lysine (pI = 9.6) be separated from Glycine (PI = 6.1) bye electrophoresis) ?

(e) What are are functions of Nucleic acids in human body ?

(2×5=10)