(07/21-II)

5254

B. Sc. EXAMINATION

(For Batch 2011 & Onwards)

(Sixth Semester)

CHEMISTRY

Paper–XX

CH-306

Organic Chemistry

Time : Three Hours *Maximum Marks : 27*

Note : Attempt *Five* questions in all, selecting *two* questions from each Section.Question No. 1 is compulsory.

1. (a) Out of alcohols and thioalcohols, which are stronger acids and why ?

   (b) Why are 5-membered heterocyclic compounds more reactive towards electrophilic substitution reactions than benzene ?

   (c) Compare the aromatic character of pyrrole, thiophene and furan giving reasons.

   (d) Pyridine is more basic than pyrrole, explain.

   (e) Explain, why α-hydrogens are acidic in nature.

   (f) Why amino acids are called amphoteric compounds ?

   (g) What do you mean by primary and secondary structure of proteins ? 7×1=7

Section A

2. (a) Define sulphur ylides and give example. 1

   (b) Convert benzene sulphonic acid into benzyl amine. 2

   (c) Write one method of synthesis and uses of sulphaguanidine. 2

3. (a) Describe Bischler-Naperalski synthesis of isoquinoline along with its mechanism. 2

(b) Give *two* examples of electrophilic reactions of quinoline where substitution takes place at 5 and 8-positions and why ? 2

(c) What happens when Indole is sulphonated with SO_3 ? 1

4. (a) Explain, why electrophilic subsititution in pyridine takes place at position-3 and nucleophilic substitution at position-2 ? 2

(b) Explain aromatic character of pyrrole on the basis of MO theory. 2

(c) Give one method of preparation of Furan. 1

Section B

5. (a) What are enolates ? Give *two* examples along with their structures. 2

(b) Out of enolate anion formed from ethyl acetate and diethyl malonate which is more stable and why ? 1

(c) Write the mechanism of Claisen condensation. 2

6. (a) What do you mean by isoelectric point ? Explain, why different α-amino acids have different iso-electric points. 2

(b) Write a brief note on solid phase peptide synthesis. 2

(c) Explain peptide bond. 1

7. (a) What is chain-growth polymerization ? Give *two* examples of such polymers. 2

(b) Explain Zeigler-Natta polymerization with mechanism. Also give its advantages. 2

(c) What are epoxy resins ? Give their preparation. 1