

5254

**B. Sc. EXAMINATION**

(Sixth Semester)

**CHEMISTRY**

Paper XX (CH-306)

Organic Chemistry

*Time : Three Hours*

*Maximum Marks : 27*

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

1. (a) Thioethers are stronger nucleophiles than ethers, explain.
- (b) How can you prepare phenol from benzene sulphonic acid ?
- (c) Pyrrole is more reactive than benzene towards electrophilic substitution reactions, explain.

- (d) Why five membered heterocyclic compounds are less aromatic than benzene ?
- (e) What are enolates ? Give two examples along with their structures.
- (f) Explain isoelectric point. Do all  $\alpha$ -amino acids have same isoelectric point ?
- (g) What are epoxy resins ? Give their characteristics.  $7 \times 1 = 7$

### Section A

2. (a) Give synthesis of sulphaguanidine. 1
- (b) What are synthetic detergents ? Give synthesis of alkyl benzene sulphonate. 2
- (c) Bring about the following conversions : 2
- (i) Benzene to Benzene sulphonamide
- (ii) Dimethyl sulphide to Dimethyl sulphoxide.
3. (a) Explain aromatic character of pyrrole on the basis of molecular orbital theory. 1
- (b) Electrophilic substitution in pyrrole takes place at second position whereas in pyridine at third position ? Explain. 2

- (c) Give two methods of synthesis of thiophene. 2
4. (a) Give all the steps involved in Bischler-Napieralski synthesis of Isoquinoline. 2
- (b) Give the position at which electrophilic substitution occurs in Indole and reason for its low reactivity than pyrrole towards electrophilic substitution reactions ? 2
- (c) Give two examples of electrophilic substitution reactions in Quinolone. 1

### Section B

5. (a) Based on Claisen's condensation, outline the synthesis for each of the following : 2  
Acetylacetone, 2-Benzoyl cyclohexanone.
- (b) Write a detailed note on keto-enol tautomerism of acetoacetic ester. 1
- (c) Arrange the following compounds in increasing order to their acidic strength and justify the order : 2
- (i) Acetone
- (ii) Chloroacetone
- (iii) Diethyl malonate.

6. (a) What are peptides ? Discuss their structure. 2
- (b) What are essential amino acids ? Name any *two* of them and write their structures. 2
- (c) Give various steps of peptide synthesis by taking example. 1
7. (a) What do you mean by addition polymers ? Give two examples of such polymers. 2
- (b) What is Zeigler-Natta polymerization ? Give its advantages over free radical vinyl polymerization. 2
- (c) Which polymers are manufactured by the condensation of : 1
- (i) Formaldehyde and urea
  - (ii) Formaldehyde and Phenols.