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05/16-I)

**5254**

**B. Sc. EXAMINATION**

(Sixth Semester)

CHEMISTRY

Paper XX (CH-306)

Organic Chemistry

Time : Three Hours

Maximum Marks : 27

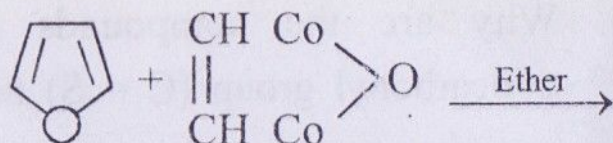
Note : Attempt *Five* questions in all, selecting at least *two* questions from each Section. Q. No. 1 is compulsory.

- (a) Why are the compounds containing thiocarbonyl group ( $C = S$ ) not stable ?
- (b) Why the dipole moment of furan (0.7 D) is lower than that of tetrahydrofuran (1.7D).
- (c) What happens when Indole reacts with  $SO_3$  in the presence of pyridine ?

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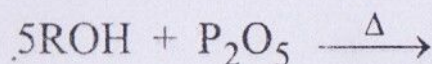
P.T.O.

- (d) What are essential amino acids ? Name any *two* of them.
- (e) What is the difference between the two notation Nylon-6 and Nylon 66 ?
- (f) Explain the peptide bond.
- (g) Complete the Rx.



### Section A

2. (a) Discuss the structure of Dimethyl sulfoxide molecule. 2
- (b) How will you prepare sulphaquanidine from aniline ? 2
- (c) Complete the reaction : 1



3. (a) Discuss the mechanism of desulphonation of Benzene sulphonic acid. 2
- (b) Why thiophene is more aromatic in nature

- (c) Why pyridine is more basic than pyrrole ? 1½

4. (a) Discuss the mechanism of nucleophilic substitution reaction of pyridine. 2
- (b) Give the mechanism of nitration of quinoline. 1½
- (c) Write the chemical equation to convert succinic acid into pyrrole. 1½

### Section B

5. (a) Why the  $\alpha$ -hydrogens of carbonyl compounds are acidic as compare to the hydrogen of ordinary C-H bond ? 1½
- (b) What is Claisen condensation ? Give its mechanism. 1½
- (c) How will you convert ethyl acetoacetate into :
- (i) *n*-valeric acid
- (ii) Acetyl acetone ? 2



6. (a) Write the structure of alanine at pH = 2  
and pH = 10. 1

(b) Explain the following :

(i) Isoelectric point

(ii) C-terminal end of polypeptides. 2

(c) How will you synthesize glycine and  
phenyl alanine from Pot. Phthalimide ? 2

7. (a) Explain Zeigler-Natta polymerisation with  
mechanism. Also give its advantages. 2

(b) Give the preparation and uses of one  
epoxy resin. 1½

(c) Write the methods of preparation and uses  
of :

(i) Orlon

(ii) PMMA

(iii) PVC. 1½