(i) Printed Pages: 2 Roll No. .....

(ii) Questions : 9 Sub. Code : 0548

Exam. Code : 0006

B.A./B.Sc. (General) 6th Semester

(2042)

CHEMISTRY

(Same for B.Sc. Microbial and Food Technology)

Paper—XXII : Organic Chemistry—B

Time Allowed : Three Hours] **[Maximum Marks : 22**

Note :— Attempt any ***five*** questions in all including Question No. **9** which is compulsory question and selecting ***one*** question each from Unit I-IV.

UNIT—I

1. (a) Predict the products of the reactions of glycine with following :
   (i) $LiAlH_4$
   (ii) Nitrous acid.
   (b) Describe the isoelectric point of α-amino acids and protein denaturation. 2,2
2. (a) Elaborate the solid-phase peptide synthesis.
   (b) Discuss the double helical structure of DNA. 2,2

UNIT—II

3. (a) Write the mechanism of cationic vinyl polymerization.
   (b) Illustrate the Ziegler-Natta polymerization. 2,2
4. Give the preparation of following :
   (i) Urea formaldehyde resins
   (ii) Neoprene. 2,2

UNIT—III

5. Illustrate the following :
   (i) Keto-enol tautomerism of ethyl acetoacetate
   (ii) Alkylation of enamines using CH_3I. 2,2

6. (a) Depict the synthesis of ethyl acetoacetate via Claisen condensation.
   (b) Describe the alkylation of diethyl malonate. 2,2

UNIT—IV

7. (a) Predict the products of the following reactions :
   (i) $CH_3COCl + (C_2H_5)_2Zn \longrightarrow ? \xrightarrow{\text{Rearrange}} ?$
   (ii) $CH_3CN + CH_3MgBr \longrightarrow ? \xrightarrow{H_2O/H^+} ?$
   (b) Give one method for the preparations of the following :
   (i) Phenyl lithium
   (ii) Diethyl zinc. 2,2

8. With chemical equations, explain the following :
   (i) Reaction of ethyl formate with CH_3MgBr/H^+, H_2O
   (ii) Treatment of acetaldehyde with diethyl zinc followed by hydrolysis
   (iii) 1,2-Addition reaction of $PhCH=CHCOCH_3$ with CH_3Li and H^+/H_2O
   (iv) Action of CH_3MgBr on CO_2/H^+, H_2O. 4

(Compulsory Question)

9. (a) What are the constituents of nucleic acids ?
   (b) How will you prepare Glyptal polymer ?
   (c) Explain acidity of α-hydrogens.
   (d) Give the preparation of Grignard's reagent. $4 \times 1.5 = 6$