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

(ii) Questions : 9 Sub. Code : 0548

Exam. Code : 0006

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

1059

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 from each Units I to IV.

UNIT—I

1. (a) Describe the double helical structure of DNA.
   (b) Explain Gabriel synthesis for the preparation of α-amino acids. 2,2
2. (a) Discuss solid phase peptide synthesis with suitable example.
   (b) What do you understand by protein denaturation/ renaturation ? 3,1

UNIT—II

3. (a) Elaborate the mechanism of Ziegler-Natta polymerization.
   (b) How will you prepare Bakelite ? 2,2
4. (a) Differentiate between natural and synthetic rubbers.
   (b) Illustrate the synthesis of Dacron. 2,2

UNIT—III

5. (a) Discuss the synthesis of ethyl acetoacetate via Claisen condensation.

   (b) Explain acidity of α-hydrogens. 3,1

6. Describe the following :—

   (i) Keto-enol tautomerism of ethyl acetoacetate

   (ii) Alkylation of enamines. 2,2

UNIT—IV

7. With chemical equations, write the products of the following reactions :

   (i) Ethyl acetate + $CH_3MgBr \xrightarrow{H_2O/H^+}$

   (ii) Acetone + $CH_3MgBr \xrightarrow{H_2O/H^+}$

   (iii) Diethyl zinc + mercuric chloride $\longrightarrow$

   (iv) Acetaldehyde + ethyl lithium $\xrightarrow{H_2O/H^+}$ 4

8. (a) Give one method of preparation of Grignard's reagent and diethyl zinc.

   (b) What happens when :

   (i) Ethyl magnesium bromide is treated with methyl cyanide

   (ii) Methyl lithium with CO_2/H_2O, H^+ 2,2

(Compulsory Question)

9. (a) Explain isoelectric point of α-amino acids.

   (b) Give preparation of epoxy resins.

   (c) Illustrate alkylation of diethyl malonate with suitable example.

   (d) How will you synthesize organometallic compounds using Grignard's reagent ? 4×1.5=6