

M.Sc.-II (Chemistry) (CBCS Pattern) Fourth Semester CBCS
PSCHT14.2 - Organic Chemistry-I Special - I

P. Pages : 2

Time : Three Hours



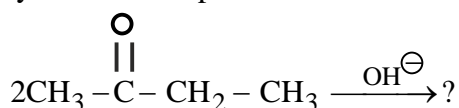
GUG/W/18/11451

Max. Marks : 80

1. a) Explain the mechanism of following reactions 8
i) Benzoin condensation ii) Dieckmann reaction
- b) What are organometallic reagents? Give any three method of preparation and application of organolithium compounds. 8

OR

- c) Discuss mechanism of Knoevenagel reaction. 4
- d) Identify the reaction product & name it suggest mechanism of the reaction. 4



- e) What are Grignard reagents? Explain stereochemistry of addition of G.R. to carbonyl compound. 4
- f) Explain nucleophilic addition of Grignard reagent to 4
i) CO_2 ii) CS_2
iii) CH_3CONH_2 iv) Epoxide
2. a) Explain following reaction with mechanism. 8
i) Reformatsky reaction ii) Simon-Smith reaction.
- b) Discuss olefin metathesis by Ist and IInd generation catalyst. 8

OR

- c) Write a note on Wilkinson's catalyst. 4
- d) Discuss the application of $\text{CO}_2(\text{CO})_8$ in organic synthesis. 4
- e) What is Gilman's Reagent? Discuss application in organic synthesis. 4
- f) Explain role of organomercury compound in organic synthesis. 4
3. a) Discuss various condition for chirality. Explain in brief chirality transfer. 8
- b) Discuss protection and deprotection of functional group of carbonyl group and amino group. 8

OR

- c) Write a note on Asymmetric synthesis. 4
- d) Write a note on Cram's rule. 4
- e) Describe solid phase peptide synthesis. 4
- f) Discuss protection and deprotection of carboxylic acid group. 4
- 4. a) What do you mean by Disconnection Approach. Discuss various guideline of disconnection approach. 8
- b) Discuss the synthesis of carbonyl compound by 1,1 , 1,2 , 1,3 disconnection approach. 8

OR

- c) Explain the term Chemoselectivity. 4
- d) Discuss the phenomenon of Functional Group Inter conversion (FGI). 4
- e) Discuss synthesis of Diels Alder reaction by disconnection approach. 4
- f) Write a short note on 'Umpolung concept' 4
- 5. a) What is LDA? Discuss one application. 2
- b) State any two application of acetoacetic ester. 2
- c) What are organozinc compound? Give one method of preparation of it. 2
- d) Give any two application of organopalladium compound in organic synthesis. 2
- e) Describe homotopic and heterotopic Ligands. 2
- f) State any one method for the protection and deprotection of carboxylic acid group. 2
- g) Explain Robinson Annulation. 2
- h) Explain Michael Addition. 2
