

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

P. Pages : 2

Time : Three Hours



GUG/W/23/11451

Max. Marks : 80

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1. a) Explain the following. 8
i) Base and acid catalysed halogenation of ketone.
ii) Bayliss-Hillman reaction.

- b) Explain O-metalation of arenes using organolithium compounds. 8

OR

- c) Explain kinetic and thermodynamic control in the generation of enolates. 4

- d) Discuss the Knoevenagel condensation with mechanism. 4

- e) Give any two synthesis and applications of organomagnesium reagents. 4

- f) Explain Dickmann reaction with mechanism. 4

2. a) Explain preparation and application of organocopper reagents. 8

- b) Explain the following: 8

i) Allyl deprotection in peptide.

ii) Sonogashira reaction.

OR

- c) Explain Simon-Smith reaction with mechanism. 4

- d) Explain role of organo Hg and Cd reagents in organic synthesis. 4

- e) What are the applications of $\text{Fe}(\text{CO})_5$ in organic synthesis? 4

- f) How will be $[\text{Rh}(\text{PPh}_3)]$ used in organic reactions? 4

3. a) Explain protection and deprotection of carbonyl group in organic reactions? 8

- b) Write in brief about asymmetric epoxidation and asymmetric dihydroxylation? 8

OR

- c) Explain Felkin-Anh Rule. 4

- d) Discuss asymmetric hydrogenation. 4

- e) Write a note on solid phase peptide synthesis? 4

- f) Discuss protection of amino group. 4

4. a) Discuss various guideline for choosing disconnection approach in organic synthesis. 8
- b) Explain role of 1-3 disfunctionalized compounds in two group C-C disconnection in organic synthesis. 8

OR

- c) Write a note on Diels-Alder Reaction? 4
- d) Give any two examples of cyclisation reaction. 4
- e) Explain one group C-C disconnection approach. 4
- f) Explain Robinson annelation with mechanism. 4
5. a) Write Mannich reaction. 2
- b) Explain the addition of CH_3MgBr on CO_2 . 2
- c) Explain use of Gilman's reagent with example. 2
- d) Explain Stille coupling reaction. 2
- e) What is Re-Si face concepts? 2
- f) What do you mean by Homotopic and heterotopic ligand. 2
- g) Explain term regioselectivity. 2
- h) What do you mean by retrosynthetic analysis? 2
