

M.Sc.-II (Chemistry) (CBCS Pattern) Semester - IV
PSCHT14.2 - SPE-I : Organic Chemistry-I

P. Pages : 2

Time : Three Hours



GUG/S/23/11451

Max. Marks : 80

- Notes : 1. All questions are compulsory & carry equal marks.
2. Draw suitable diagram wherever necessary.

1. a) What are organometallic compound? Give three methods of preparation of organomagnesium reagents. Give two application of organomagnesium reagent. **8**
- b) Discuss with suitable examples: **8**
- i) Knoevenagel reaction.
- ii) Favorskii reaction.

OR

- c) Write a note about Cannizzaro's reaction. **4**
- d) Discuss the alpha-halogenation of ketones. **4**
- e) Write a note on organolithium compounds with application. **4**
- f) Explain the stereochemistry of Grignard addition to carbonyl compound. **4**
2. a) Explain the role of organocopper reagent in C-C bond forming reaction. Discuss Gilman's Reagent. **8**
- b) Write a note on following. **8**
- i) Wacker oxidation.
- ii) Sonogashira coupling.

OR

- c) Write a note on transmetallation. **4**
- d) Discuss Stille-coupling reaction. **4**
- e) Write a note on oxidative addition. **4**
- f) Explain Simon-Smith reaction. **4**
3. a) Explain protection and deprotection reaction involving hydroxyl group. **8**
- b) Discuss Cram's rule. How Chiral auxiliaries are useful in organic synthesis? **8**

OR

- c) Write a note on solid phase peptide synthesis with example. **4**
- d) Write a note on Re-Si face concept. **4**

- e) Write a note on enantiomer and diastereomers. 4
- f) Explain deprotection involving carboxylic group. 4
4. a) Explain two group C-C disconnection for. 8
i) 1, 3- di functionalized compounds.
ii) 1, 5- di functionalized compounds.
- b) Discuss the following. 8
i) Cyclization reaction.
ii) Amine synthesis.
- OR**
- c) Explain methods of ring synthesis. 4
- d) Discuss Robinson's annulation. 4
- e) Discuss one group C-C disconnection in allcene synthesis. 4
- f) Discuss Cyclisation reaction with suitable example. 4
5. a) Define Favorskii rearrangement. 2
- b) Give any two application of organolithium reagent. 2
- c) Give any two organocadmium reaction. 2
- d) Give Kumada reaction. 2
- e) What is asymmetric hydrogenation? 2
- f) What are homotopic and heterotopic ligands. 2
- g) Explain chemoselectivity. 2
- h) Define stereoselectivity. 2
