

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

P. Pages : 2

Time : Three Hours



**GUG/S/25/11451**

Max. Marks : 80

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1. a) Write the mechanism with suitable example. 8
- i) Mannich reaction.
- ii) Favorskii reaction.
- b) Explain the O-metalation of arenes using organolithium compounds. 8

**OR**

- c) Discuss nucleophilic addition of Grignard reagent to epoxide and either. 4
- d) Explain Benzoin condensation with mechanism. 4
- e) Explain Dieckmann reaction. 4
- f) Discuss kinetic control in the generation of enolates. 4
2. a) Discuss synthesis and application of organocopper reagent. 8
- b) Explain following coupling reaction. 8
- i) Kumada reaction
- ii) Stille reaction.

**OR**

- c) Explain Simon-Smith reaction. 4
- d) Write a short note on Wilkinson Catalyst. 4
- e) Explain Reformatsky reaction. 4
- f) Explain in brief Kumada reaction. 4
3. a) Explain the phenomenon of Homotopic and heterotopic ligand with example. 8
- b) Discuss protection of carbonyl group in organic synthesis. 8

**OR**

- c) Discuss the conformation of monosaccharides molecule. 4
- d) How is a chiral auxiliaries used in stereochemistry. 4

- e) Discuss the phenomenon of solid phase peptide synthesis with example. 4
- f) Explain Deprotection of amino group in organic synthesis. 4
- 4. a) Explain two group C-C disconnection containing 1, 5 difunctionalized compounds by taking example and Robinson annulation. 8
- b) Discuss disconnection approach in organic synthesis. 8

**OR**

- c) Discuss methods of ring synthesis. 4
- d) Describe the phenomenon of Umpolung with example. 4
- e) Explain the term chemo selectivity having at least four guidelines. 4
- f) Write short notes on amine synthesis by disconnection approach. 4
- 5. a) Write Baylis – Hillman reaction. 2
- b) Explain the addition of RMgX on CO<sub>2</sub>. 2
- c) Write short notes on organocuprate reagent. 2
- d) Define oxidative addition. 2
- e) Define Enantiomers and diastereomers. 2
- f) Define Chirality. 2
- g) Give the example of cyclisation reaction. 2
- h) Explain term regioselectivity. 2

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