

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

P. Pages : 2

Time : Three Hours



GUG/W/22/11451

Max. Marks : 80

Notes : 1. All questions are compulsory and carry equal marks.

1. a) Discuss with suitable example. 8
i) Knoevenagel reaction
ii) Hydrolysis of haloform
- b) Give synthesis of organo-Li compound. Discuss O-Metallation of arenes using organolithium compounds. 8

OR

- c) Discuss nucleophilic addition mechanism of carbonyl group to grignard reagent. 4
- d) Explain Baylis-Hillman reaction. 4
- e) Discuss Dieckmann reaction. 4
- f) Discuss kinetic control in generation of enolates. 4
2. a) Explain the following 8
i) Kumada reaction
ii) Stille coupling reaction
- b) Explain the following 8
i) Simon-Smith reaction
ii) Gilman's reagent

OR

- c) Write a short note on Wilkinson Catalyst. 4
- d) Give the application of Fe(CO) in organic synthesis. 4
- e) Explain olefin metathesis by Ist generation catalyst. 4
- f) Discuss the role of organo Hg in organic synthesis. 4
3. a) Discuss protection and deprotection of carbonyl group in organic reaction. 8
- b) Discuss with suitable example. 8
i) Asymmetric hydrogenation.
ii) Asymmetric dihydroxylation.

OR

- c) Write a note on Re-Si face concept. 4
- d) Discuss Cram's chelate model. 4
- e) Discuss mutarotation. 4
- f) Discuss solid phase peptide synthesis. 4
4. a) Explain the following. 8
- i) Cyclisation reaction.
- ii) Importance of order of events inorganic synthesis.
- b) Discuss the following 8
- i) Michael addition
- ii) Diels-Alder reaction

OR

- c) Explain use of acetylene in one group C-C disconnection in organic synthesis. 4
- d) Explain Robinson annelation. 4
- e) Discuss amine synthesis using disconnection approach. 4
- f) Discuss one group C-X disconnection approach inorganic synthesis. 4
5. a) Explain Keto-enol tautomerism. 2
- b) Discuss benzoin condensation. 2
- c) What is Noyori catalyst? 2
- d) Write Heck reaction. 2
- e) Define enantiomers and diastereomers. 2
- f) What is mean by protection of functional group? 2
- g) Define reversal of polarity. 2
- h) Discuss the term regioselectivity. 2
