M.Sc. - II (Chemistry) (CBCS Pattern) Semester-IV

PSCHT14.2 - Organic Chemistry-I Special-I

P. Pages : 2 **GUG/W/24/11451**

Time : Three Hours Max. Marks : 80

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1. a) Explain the following. **8**

i) Base Catalysed halogenation of ketones.

ii) Favorski reaction

b) What are organometallic reagents? Give any three method of preparation and application of organolithium compounds. **8**

OR

c) Write a note on alkylation of enolate. **4**

d) Write a reaction and mechanism of Mannich reaction. **4**

e) Discuss nucleophilic addition of Grignard reagent to epoxide and ester. **4**

f) Explain O-metalation of arene using oregano lithium compound. **4**

2. a) Explain the role of organocopper reagent in C-C bond forming reaction. Discuss Gilman's reagent. **8**

b) Explain the following- **8**
i) Allyl deprotection in peptides
ii) Kumada reaction

OR

c) Explain role of organomercury compound in organic synthesis. **4**

d) Explain Simon-Smith reaction. **4**

e) Explain Reformatsky reaction. **4**

f) Discuss Suzuki Coupling reaction. **4**

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

b) Discuss cram's rule. How Chiral auxiliaries are useful in organic synthesis? **8**

OR

c) Write a short note on asymmetric dihydroxylation. **4**

d) What are carbohydrates? Give classification of carbohydrates. **4**

e) Describe solid phase peptide synthesis. **4**

f) Write a note on stereoselective addition. **4**

4. a) Explain two group C-C disconnection involving 1, 5 difunctionalized compound in organic synthesis. **8**

b) Explain following- **8**

i) Diels – Alder reaction

ii) Cyclisation reaction

OR

c) Explain the term Chemoselectivity. **4**

d) Explain methods of ring synthesis. **4**

e) Explain use of aliphatic nitro compounds in one group C – C disconnections in organic synthesis. **4**

f) Explain Michael addition reaction. **4**

5. a) Explain hydrolysis of halo forms with example. **2**

b) What is LDA? Discuss one application. **2**

c) What are organometallic compounds? **2**

d) Write stille coupling reaction. **2**

e) Explain Heck reaction. **2**

f) Describe homotopic and heterotopic Ligands. **2**

g) State any one method for the protection and deprotection of carboxylic acid group. **2**

h) Explain Robinson Annulation. **2**

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