

M.Sc. (Chemistry) (CBCS Pattern) Sem-III  
**PSCHT10.2 - Special-I : Organic Chemistry-I Paper-X**

P. Pages : 2

Time : Three Hours



GUG/W/22/11334

Max. Marks : 80

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

1. a) Explain following terms- 8  
i) Photo-fries rearrangement      ii) Photo reduction with example

b) Discuss about quenching, transfer of excitation energy & singlet and triplet states. 8

**OR**

c) Explain Norrish type – II reaction. 4

d) Discuss the photochemistry of vision. 4

e) Discuss photo chemical cyclization with example. 4

f) Explain Paterno-Buchi reaction. 4

2. a) Explain the following reactions. 8

i) Claisen rearrangement      ii) Cope rearrangement

b) Explain Woodward – Hoffman correlation diagram of pericyclic reaction. 8

**OR**

c) Discuss [4+2] cyclo-addition of ketones. 4

d) Discuss stereochemical effect on cycloaddition reaction. 4

e) Explain Diels – Alder reaction. 4

f) Discuss Ene reaction. 4

3. a) i) Explain stereochemical aspects of hydride addition. 8

ii) Discuss enzyme catalyzed reduction

b) Discuss following. 8

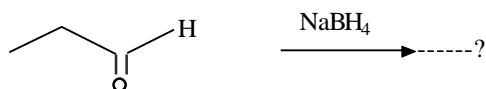
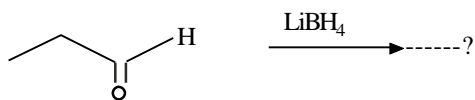
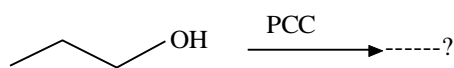
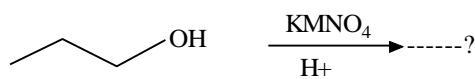
i) Sharpless asymmetric epoxidation.

ii) Use of PCC in controlled oxidation reaction with example.

**OR**

c) Explain Meerwein Ponndorf reduction. 4

d) Complete the following reaction 4



e) Discuss Baeyer's – Villiger oxidation. 4

d) Write a note on Wilkinson catalyst. 4

4. a) Explain in details the Umpolung concept with suitable examples. 8

b) Explain the preparation and some synthetic application of organoborane reagents with reference to  $\text{R}_3\text{B}$ . 8

**OR**

c) Explain the synthesis of 2,2 dienes. 4

d) Discuss the synthetic application of phosphorus ylide. 4

e) Discuss preparation & application of 9-BBN in organic synthesis. 4

f) Discuss the synthetic application of  $\text{Me}_3\text{SiH}$  in organic synthesis. 4

5. a) Write a note on Barton reaction. 2

b) Discuss photochemical isomerism of G's alkene with suitable example. 2

c) Write a brief note on Sommelet -Hauser rearrangement. 2

d) Give the classification of pericyclic reactions. 2

e) Write note on Fremy's Salt. 2

f) What is Collin and Jones reagent? Give single use in organic synthesis. 2

g) Write a short note on Dipole inversion. 2

h) Give Paterson synthesis. 2

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