

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

P. Pages : 2

Time : Three Hours



GUG/W/23/11334

Max. Marks : 80

1. a) Explain photochemistry of aromatic compounds with reference to addition & substitution reaction. **8**
- b) Explain: **8**
- i) Barton reaction.
 - ii) Singlet & Triplet state.

OR

- c) Explain photo-fries rearrangement. **4**
 - d) Discuss – Hofmann-Löffler reaction . **4**
 - e) Explain photochemistry of P-benzoquinone. **4**
 - f) Explain Norrish type-II Reaction. **4**
2. a) What do you mean by pericyclic reaction. Explain pericyclic reaction with suitable example. Explain (4+2) cycloaddition reaction. **8**
- b) Explain Electrocyclic Reactions, conrotatory & disrotatory, motion, $4n$ and $(4n + 2)$ system, with more emphasis on $(2 + 2)$ & $(4 + 2)$ cycloaddition of ketones. **8**

OR

- c) Explain Diel's Alder reaction. **4**
 - d) Discuss cope rearrangement reaction. **4**
 - e) Explain Sommelet – Hauser rearrangement reaction. **4**
 - f) Discuss the [3, 5] sigma tropic rearrangement reaction. **4**
3. a) Explain: **8**
- i) Birch Reduction.
 - ii) Meerwein-Ponndorf verley reduction.
- b) Explain: **8**
- i) Woodward and Prevost dihydroxylation.
 - ii) What is oppenauer oxidation? Explain with example.

OR

- c) Give the reduction reaction of carbonyl group to methylene group. 4
- d) Explain ozonolysis of alkene. 4
- e) Explain Wilkinson catalyst. 4
- f) Explain corrin & Jones reagent. 4
- 4. a) Define sulphur ylides. Give its synthetic applications. Explain the use of phosphorous ylide. 8
- b) Explain the following 8
 - i) Synthesis of EE dienes.
 - ii) Preparation of and application of catechol borane.

OR

- c) Explain Paterson synthesis. 4
- d) Discuss synthetic methodologies, based on titanium compound. 4
- e) Give the preparation & properties of 9-BBN. 4
- f) Explain Umpolung concept with example. 4
- 5. a) Define Quenching. 2
- b) Explain various types of transition in organic compound. 2
- c) Write the synthetic application of allyl System. 2
- d) What is electrocyclic reaction. 2
- e) Draw the structure of $IPC_2 BH$. 2
- f) Explain enzyme catalyzed reduction. 2
- g) Explain chromium reagents. 2
- h) What is thioacetal. 2
