

M.Sc.- I (Chemistry) CBCS Pattern Semester-II
PSCCHT06 - Organic Chemistry

P. Pages : 2

Time : Three Hours



GUG/W/23/11229

Max. Marks : 80

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

1. a) Explain the following reactions with mechanisms. 8
i) Perkin reaction
ii) benzoin condensation
- b) Explain- 8
i) Michael addition reaction
ii) Explain chemo selectivity with suitable example.

OR

- c) Write a note on- 4
i) Hydrolysis of amide
ii) Ammonolysis of ester
- d) What do you mean by electrophile and nucleophile? Give the mechanism and stereochemistry of addition reaction involving electrophiles. 4
- e) Define regioselectivity. Give the mechanism of hydroboration-oxidation reaction. 4
- f) Write the note on metal hydride reduction of unsaturated carbonyl compounds with suitable example. 4
2. a) Explain the following rearrangement reactions with mechanisms. 8
i) Hoffman rearrangement
ii) Pinacol-Pinacolone rearrangement
- b) What do you mean by Free radicals. Discuss free radical substitution mechanism at an aromatic and aliphatic substrate. 8

OR

- c) Discuss various types of free radical reactions. 4
- d) Write a note on- 4
i) Wagner meerwin rearrangement
ii) Wolf rearrangement
- e) Discuss the reactivity for aliphatic and aromatic substrates. 4
- f) Give difference between Curtis and Schmidt rearrangements. 4

3. a) Discuss the Saytzeff's and Hoffman's rules in elimination reactions in details. 8
- b) Explain the following terms- 8
- i) Autoxidation ii) Free radical rearrangement
- OR**
- c) Give the mechanism of E2 reaction. 4
- d) Explain in brief- 4
- i) Reed reaction ii) Fenton's reagent
- e) Discuss the effect of attacking base and leaving group on elimination reactions. 4
- f) Why the reactions of NBS are highly regioselective? Discuss Sandmeyer reaction. 4
4. a) Discuss the following reactions in brief- 8
- i) Ugi reaction ii) Passereno reaction
- b) Explains the green synthesis of- 8
- i) Paracetamol ii) Ibuprofen
- OR**
- c) Explain the basic principles of green chemistry. 4
- d) Write a short note on- 4
- i) Sonochemistry ii) Polymer supported reagents
- e) What is nano chemistry? Explain nanotubes and nanorods. 4
- f) How by the use of green chemistry the prevention and minimization of hazardous products take place. 4
5. a) Discuss the choice of solvents in green chemistry. 2
- b) Explain the need of green chemistry. 2
- c) Discuss the E1CB reaction. 2
- d) Explain Hunsdiecker reaction. 2
- e) Write the reactions of Tiffenev-Demjnov ring expansion. 2
- f) Write a note on neighbouring group assistance in free radical reactions. 2
- g) Explain catalytic hydrogenation of double bond. 2
- h) Write Mannich reaction. 2
