



HCG-1310 Seat No. _____

M. Sc. (Sem. II) Examination

April / May - 2015

Chemistry : Paper - 502

(Organic Chemistry)

Time : 3 Hours]

[Total Marks : 70

- Instructions :** (1) All questions are compulsory and of equal marks.
(2) The medium of answers is English only.

1 Answer any four : 14

- (i) Discuss the free radical mechanism of an aromatic substrate.
- (ii) Write short notes on following :
 - (a) Sandmeyer reaction
 - (b) Hunsdiecker reaction
- (iii) Discuss the reactivity for aliphatic and aromatic substrates at a bridgehead.
- (iv) Discuss the effect of solvents on reactivity.
- (v) Discuss auto-oxidation in detail.
- (vi) Discuss ionic and acid dichromate mechanism.

2 Answer any three : 14

- (i) Discuss mechanism of metal hydride reduction of unsaturated acids.
- (ii) Discuss the addition of organozinc reagent to carbonyl compounds.

- (iii) Discuss the hydrolysis and ammonolysis of esters with suitable examples.
- (iv) Explain in detail : Perkin reaction.
- (v) Discuss the mechanism of Wittig reaction in detail.

3 Answer any three :

14

- (i) What are pericyclic reactions ? Give the classification of pericyclic reactions with examples.
- (ii) Discuss 1,3 dipolar cycloaddition reaction.
- (iii) Discuss difference between suprafacial and antarafacial cycloadditions.
- (iv) Discuss Woodward-Hoffman correlation diagrams with suitable examples.
- (v) What are electrocyclic reactions ? Using FMO approach discuss electrocyclic reaction.

4 Answer any three :

14

- (i) Write a note on aza-cope rearrangement.
- (ii) Write a note on Ene reaction.
- (iii) Explain E^1 mechanism with suitable examples.
- (iv) Discuss mechanism and orientation in pyrolic elimination.
- (v) Discuss the effect of substrate, attacking base and leaving group on E^2 mechanism.

- (i) Define neighbouring group assistance with example.
 - (ii) What is Mannich reaction ?
 - (iii) What is con-rotatory and dis-rotatory ?
 - (iv) What is Hunsdiecker reaction ?
 - (v) What is aldol condensation ?
 - (vi) Importance of solvent in E^1 mechanism.
 - (vii) What is fluxional tautomerism ?
 - (viii) Which bases are used for accomplish E^2 elimination reaction ?
 - (ix) What is Elcb reaction ?
 - (x) What is cycloaddition reaction ?
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