



BM-2012

Seat No. _____

M. Sc. (Sem. II) Examination

April / May - 2014

Chemistry : Paper - 502

(Organic Chemistry)

Time : 3 Hours]

[Total Marks : 70

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

1 Answer any four: 3.5×4

- (i) Explain reactivity for aliphatic and aromatic substrates at bridgehead.
- (ii) Illustrate the effect of solvent on reactivity.
- (iii) Discuss ionic and acid dichromate mechanisms for oxidation of aldehyde to carboxylic acid.
- (iv) Explain reactivity of attacking radical with suitable example.
- (v) Describe in brief: Arylation of Aromatic compounds by diazonium salts.
- (vi) Explain reactivity of attacking radical with suitable example

2 Answer any three: 5+5+4

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

- (iii) Discuss mechanism of metal hydride reduction of unsaturated nitriles.
- (iv) Explain in Detail: knoevenagel reaction with mechanism.
- (v) Discuss ammonolysis of esters with appropriate example.

3 Answer any three :

5+5+4

- (i) Discuss co-relation diagram of cyclobutene-cyclobutadiene.
- (ii) What are pericyclic reactions? Give the characteristics. Classify them with examples.
- (iii) Discuss suprafacial and antarafacial cycloaddition reaction.
- (iv) Explain (2+2) cycloaddition reaction with correlation diagram.
- (v) Discuss cheletropic reactions.

4 Answer any three:

5+5+4

- (i) What is sigmatropic rearrangement? Discuss [1,3] suprafacial and antarafacial shifts of H.
- (ii) Write a short note on Claisen rearrangement.
- (iii) Write a note on: Ene reaction.
- (iv) Discuss what is kinetic isotop effect?
- (v) Discuss the stereo selectivity, stereo specificity and regio selectivity of E-2 reaction.

5 Answer any seven questions in 2-4 lines each: 2×7

- (i) Define Enolates.
 - (ii) Define Neighbouring group assistance with example.
 - (iii) Define auto oxidation.
 - (iv) What is con rotation and dis rotation?
 - (v) What is fluxional tautomerism?
 - (vi) Define Perkin reaction with example.
 - (vii) Importance of leaving group in elimination reaction.
 - (viii) Define Mannich reaction.
 - (ix) What is Pyrolytic elimination reaction?
 - (x) Give two examples of E_1 mechanism.
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