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KAA-1751 Seat No. _____

M. Sc. (Sem. II) Examination

April/May - 2013

Chemistry : Paper-502

(Organic Chemistry)

Time : 3 Hours]

[Total Marks : 70

Instructions : (1) All questions are compulsory and carry equal marks.

(2) Reply only in English medium.

1 Reply any four : **3.5×4**

(i) Discuss the mechanism of Sandmeyer and Hunsdiecker Reaction.

(ii) Discuss the auto oxidation in detail.

(iii) Discuss the allylic rearrangements through free radical mechanism.

(iv) Discuss the mechanism of allylic halogenation with NBS.

(v) Discuss the arylation of aromatic compounds by diazonium salt.

(vi) Discuss the free radical mechanism at an aromatic substrate.

2 Reply any three : **5+5+4**

(i) Discuss the mechanism and stereochemical aspects of reduction by LiAlH_4 .

- (ii) Explain the hydrolysis of esters and amides.
- (iii) Discuss the mechanism of metal hydride reduction of saturated and Unsaturated carbonyl compounds.
- (iv) Discuss the mechanism of Wittig reaction in detail.
- (v) Discuss the mechanism of Stobbe and Mannich reaction.

3 Reply any two :

7+7

- (i) What are electrocyclic reactions ? Discuss the thermal and photochemical conversion of 2, 4, 6 octatriene in to dimethyl cyclohexadiene through FMO approach.
- (ii) (a) Explain, why thermal [4+2] addition takes place very easily but [2+2] does not.
(b) Differentiate between suprafacial and antarafacial process.
- (iii) Using PMO approach discuss the Cycloaddition and electrocyclic reactions.

4 Discuss any three :

5+5+4

- (i) Sigmatropic reactions.
- (ii) Discuss the mechanism and stereochemistry of E2 elimination reactions.
- (iii) Compare E1, E2 and E1CB mechanism.
- (iv) Discuss Cope and Claisen rearrangement.
- (v) Mechanism and orientation of Pyrolytic elimination.