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Total No. of Pages : 02

Total No. of Questions : 09

M.Sc. (Chemistry) (2015 to 2017) (Sem.-1)
ORGANIC CHEMISTRY
Subject Code : MSCH-102
M.Code : 71596

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

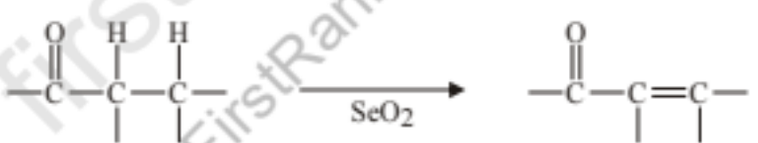
1. **Attempt Five questions in all including question no. I which is compulsory and selecting one each from Unit I to IV.**
2. **All Questions carry equal marks.**

Q1. (a) Define linear and convergent synthesis.

(b) Write a reterosynthethetic analysis for the protection of carboxylic group.

(c) Write the reaction and name the catalyst used in Gilman's reagent.

(d) Offer a suitable mechanistic pathway for the following transformation :



(e) Discuss the use of ionic liquids in the synthesis of organic compounds.

(f) How enantiomeric purity can be determined with NMR spectroscopy.

(g) What do you understant by enantio-discrimination?

(h) How is pyrrole prepared?

(i) Write a short note on the reaction of chromones.

(j) How the pyrylium salt is synthesized?

UNIT-I

Q2. (a) Discuss the protection and deprotection of amines.

(b) Discuss the use of dithiones in the synthesis of organic compounds (umpolung reaction).

Q3. (a) Explain the applications of green chemistry to organic synthesis.

(b) Write a short note on synthon and synthetic equivalent with suitable examples.

UNIT-II

Q4. How Wilkinson's catalyst, crown ethers and dicyclohexylcarbodimide are useful reagents for synthesis of organic compounds. Discuss with suitable examples.

Q5. (a) Write a short note on Merrifield resin.

(b) With suitable example, illustrate the use of 2,3-dichloro-5,6-dicyano-l,4-benzoquinone and trimethylsilyl iodide.

UNIT-III

Q6. What do you mean by asymmetric induction? Discuss in detail for the various methods of asymmetric induction.

Q7. (a) Write a short note on asymmetric acyl transfer reactions.

(b) Discuss the use of chiral quaternary ammonium salts in asymmetric synthesis.

UNIT-IV

Q8. (a) Discuss the different methods used in the synthesis of oxiranes and indene derivatives.

(b) Outline the methods for the reactions of furan and coumarins.

Q9. Give the synthesis of following :

(a) oxetanes

(b) azetidines

(c) pyrrolidine

(d) pyridones

(e) tetrahydrofuran

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.