

SECTION—C

5. (a) Discuss the effects of leaving group at a saturated carbon and at a carbonyl carbon in context of aliphatic nucleophilic substitution.
- (b) Discuss Diazo transfer reaction with suitable mechanism. 6,4
6. (a) What is SEi mechanism ? Discuss double bond migration reaction with reference to aliphatic electrophilic substitution.
- (b) Discuss alkylation of organoboranes. 6,4

SECTION—D

7. (a) What are the factors that affect the position of the incoming group in the benzyne mechanism ? Discuss these factors with example.
- (b) Write the plausible product(s) of the following reaction with mechanism.



8. (a) Heating m-bromonitrobenzene with aqueous alcoholic KCN results in the formation of a o-bromobenzoic acid. Justify the statement with suitable mechanism.
- (b) Write the product(s) of the following reaction with suitable mechanism :



2382(2221)/IZ-8395 2

Exam. Code : 210401
Subject Code : 4925

M.Sc. Chemistry 1st Semester (Batch 2021-23) ORGANIC REACTION MECHANISM—I

Paper—Course-II

Time Allowed—3 Hours] [Maximum Marks—50

Note :— Attempt FIVE questions in all, selecting at least ONE question from each Section. The FIFTH question may be attempted from any Section. All questions carry equal marks.

SECTION—A

1. (a) What is prochirality ? Discuss diastereotopic faces with appropriate examples.
- (b) Write short notes on :—
- (i) Homoaromaticity and
- (ii) Stereospecific synthesis. 5,5
2. Write short notes on :—
- (i) Non-alternant hydrocarbons
- (ii) Optical activity in allenes
- (iii) Aromaticity in non-benzenoid compounds. 3,4,3

SECTION—B

3. Most of the organic reactions can be fitted into six categories. Discuss these six categories with example. 10
4. What is neighbouring group mechanism ? Discuss neighbouring group participation of C-C single bond and aromatic ring. 10

2382(2221)/IZ-8395

1

(Contd.)