Exam. Code : 103203
Subject Code : 1293

B.A./B.Sc. 3rd Semester (Batch 2020-23)

CHEMISTRY

(Organic Chemistry—II)

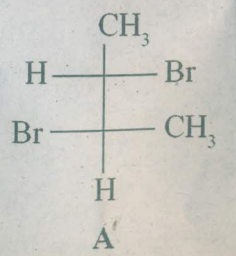
Time Allowed—3 Hours] [Maximum Marks—35

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.

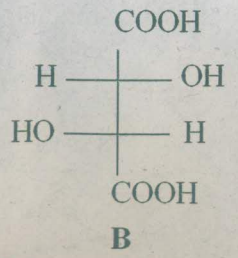
SECTION—A

1. (a) Using suitable examples, enlist various differences between Internal racemization and External racemization. 3

   (b) Assign R/S configuration to the following compounds :



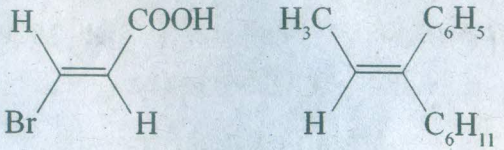
A



B 4

2. (a) Justify the statement "S_N1 *reaction proceeds with partial racemization*". 4

(b) Assign E/Z configuration to the following compounds :



2

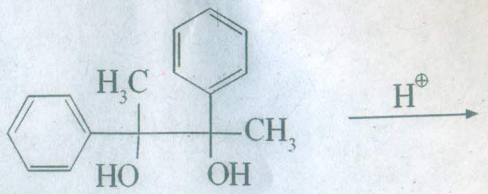
(c) Differentiate between erythro and threo-configuration. 1

SECTION—B

3. (a) Draw Newman's projection for Boat and Chair conformation of cyclohexane and explain their relative stability. 3

(b) Draw potential energy diagram for various conformations of Cyclohexane and discuss their relative stability. 4

4. (a) Complete the following reaction and provide a suitable mechanism for the same :



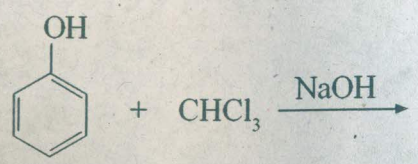
4

(b) Taking example of 1-tert-butyl cyclohexane, discuss 1,3-diaxial interaction. 3

SECTION—C

5. (a) Discuss Gatterman synthesis with suitable mechanism. 3.5

(b) Complete the following reaction and provide a suitable mechanism.



3.5

6. (a) Using 1,3-dithaine, how will you synthesize Cyclopropanone ? 4

(b) Provide a sequence of steps for the conversion of benzonitrile to aetophenone. 3

SECTION—D

7. Discuss Wolff-Kishner reduction reaction with suitable mechanism. 7

8. Discuss Wittig reaction and provide its suitable mechanism. 7