

Exam. Code : 103204

Subject Code : 1293

B.A./B.Sc. 4th Semester

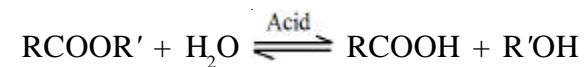
CHEMISTRY

(Organic Chemistry–III)

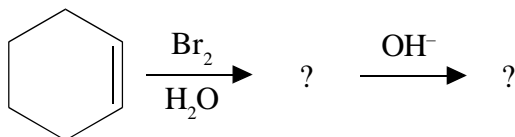
Time Allowed—2 Hours] [Maximum Marks—35

Note :—There are **EIGHT** questions of equal marks.
Candidates are required to attempt any **FOUR** questions.

1. (a) Identify the correct procedure for the conversion of the following and specify the mechanism in each case :
 - (i) Bromobenzene → benzoic acid
 - (ii) *tert*-Butyl chloride → 2,2-dimethylpropanoic acid
- (b) Why CH_3COCl is more reactive than CH_3CONH_2 towards nucleophilic acyl substitution ?
2. Write the mechanism for the following forward and backward reaction. Also explain how do we control the position of equilibrium.



3. (a) Write product(s) in the following reaction with mechanism and stereochemistry :



- (b) What happened when tetrahydrofuran treated with HI ? Explain with mechanism.
4. (a) Discuss one example in each case for electrophilic and nucleophilic substitution reaction of heterocyclic compound.
- (b) Among the Pyrrole, Thiophene and Furan, which is more aromatic and why ?
5. (a) Write mechanism for Hoffmann bromamide reaction by taking suitable example.
- (b) How 1° , 2° and 3° amines can be separated using Hinsberg test ? Explain with suitable example.
6. Write short notes on :
- (a) Basicity of amine
- (b) Reductive amination.

7. What product(s) would be formed when organolithium reacts with acid chloride, epoxide, nitriles, CO_2 , alkynes and carbonyl compounds ? Explain with mechanism in each case.
8. What product(s) would be formed when organomagnesium reacts with carbonyl compounds, cyanogen chloride, halogenated compounds and alkyl chloroformate ? Explain with mechanism in each case.