NKT/KS/17/6553

B.Pharm. Semester—III (C.B.S.) Examination

PHARMACEUTICAL CHEMISTRY–III (Organic)

Paper—2

Time : Three Hours] [Maximum Marks : 80

Note :— (1) Question No. **1** is compulsory.

(2) Solve any **four** questions from remaining.

(3) Discuss the reaction, mechanism wherever necessary.

1. Solve any **five** of the following :

(a) Justify giving examples, cyclopropane always undergo ring opening reactions.

(b) What product would you expect when bromine dissolved in carbon tetrachloride reacts with propene in the presence of water ? Write the mechanism for this reaction.

(c) Write a note on hydration of propyne.

(d) Among benzaldehyde and acetaldehyde, which will undergo Cannizzaro reaction and why ?

(e) Write the laboratory tests used for identifying various classes of amines.

(f) Write a note on α-halogenation of aliphatic acids.

(g) Discuss the reactivity of toluene and nitrobenzene mononitration. 4×5=20

2. (a) Explain the nucleophilic aliphatic substitution reaction which is accompanied with complete inversion of configuration. 9

(b) Give an elaborate account of E_2 mechanism. 6

3. (a) Explain the mechanism of nucleophilic addition to carbonyl compounds and write some important reactions given by aldehydes and ketone. 8

(b) State and explain the preparation and reactions of phenol. 7

4. (a) Grignard reagent is one of the most versatile reagents in organic chemistry. Justify the statement giving suitable examples. Depict the mechanism involved in the formation of this reagent. 10

(b) Write the mechanism of cumene hydroperoxide rearrangement. 5

5. How will you plan for the following synthesis from benzene (any **five**) :

   (a) p-toluidine

   (b) m-bromophenol

   (c) p-amino benzoic acid

   (d) diphenyl methane

   (e) picric acid

   (f) styrene ? 3×5=15

6. (a) Explain Markonikov's and Anti-markonikov's orientation giving examples and mechanism involved. 9

   (b) Write a note on halogenation of alkane. 6

7. Write short notes on (any **three**) :

   (a) Hofmann degradation reaction

   (b) Aldol condensation

   (c) Reimer-Tiemann reaction

   (d) Pyrolysis and cracking. 5×3=15

8. Give a detailed account of electrophic aromatic substitution reactions covering mechanism, reactivity and orientation. 15