

B.Sc Chem (Hons) Sem IV
Paper CC-IX

Full Marks: 60

Time: Two Hours

Model Questions

Answer two questions from each group.

Group A

Q.1 Discuss, with mechanism, Carbylamine reaction.

10

Q.2 Discuss, with mechanism, Cope elimination.

10

Q.3 Give one method of preparation of Pyrrole, Furan and Thiophene from one starting compound.

10

Q.4 How the three classes of aliphatic amine react with Nitrous acid (HNO_2) ?

10

Q.5 Give one method of preparation of secondary and tertiary amine.

10

Q.6 What happens when pyrrole is treated with KOH and CHCl_3 ? Give the mechanism.

10

Q.7 Discuss the reaction of diazonium Chloride with Pyrrole and Furan.

10

Group B

Q.8 a) Write the resonating structures of Pyrrole, Furan and Thiophene.

b) Give the order of aromaticity with reason.

c) Why 2-attack is preferred to 3-attack in pyrrole as far as electrophilic substitution reaction is concerned?

8+4+8

Q.9 a) Discuss a method of preparation of primary amine of the type $\text{R}_3\text{C-NH}_2$.

b) Give two methods of preparation of primary amine containing sec-alkyl group.

6+14

Q.10 Discuss, with mechanism-

a) Beckmann rearrangement

b) Hoffmann Bromide Degradation

c) Leucart reaction

6+8+6

Q.11 How a mixture containing primary, secondary, tertiary amines and quaternary ammonium salt can be separated? Give two methods.

10+10

Q.12 a) Discuss Gabriel Synthesis of primary amines, with mechanism.

b) Discuss the basicity of different classes of amines.

10+10

Q.13 a) Discuss Skraup synthesis of Quinoline with mechanism.

b) Discuss Fischer Indole synthesis with mechanism.

10+10