B.SC. PART I (SEMESTER II)
QUESTION BANK
SUBJECT – CHEMISTRY (CHM-52T-103)

UNIT I

Q1. How many methods are there for determining the mechanism of organic reactions? Explain any two methods in detail.

Q2. Explain the mechanism of SN1 and SN2 reactions with one example each. Also, explain the factors affecting each type of mechanism.

Q3. Explain

1. Inductive and field effects
2. Banana bond
3. Hyperconjugation
4. Clathrate compounds

UNIT II

Q1. What are conformations? Explain different conformations of n-butane with the help of Newmann's projection formula.

Q2. Write short note on:

1. Walden inversion
2. Asymmetric synthesis
3. Molecular chirality
4. Racemisation

Q3. Explain boat and chair confirmation of cyclohexane.

UNIT III

Q1. What is Huckel's (4n+2) π-electron rule? Explain the aromatic nature of furan and cyclopropenium cation on the basis of this rule.

Q2. Discuss the mechanism of following reactions:

1. Friedal craft's acylation
2. Birch reduction
3. Ullman reaction
4. Fittig reaction

Q3. Explain why $-NO_2$,-CHO ,-COOH and $-CF_3$ are deactivating with meta-directing influence but –OH, $-NH_2$ and $-CH_3$ groups are activating with ortho and para-directing influence?

UNIT IV

Q1. Explain absolute rate theory of reaction? How is it different from collision theory.

Q2. a) Describe two methods for finding out order of a reaction.

b) Derive integrated rate equation for second order reaction when initial concentrations of both the reactants are equal.

Q3. Explain briefly half life period energy of activation zero order reaction.

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