BS/2110 10303/NH

PAPER II: ORGANIC CHEMISTRY

Max. Marks: 26 Time: 3Hrs.

Candidates are required to attempt five questions (Section C 9th question being compulsory) selecting two questions from each of A & B sections.

Section – A

1. Expain the following with mechanism:-
   (i) Hydroboration oxidation reaction
   (ii) Pinacol-Pinacolone rearrangement
2. Discuss method of preparations and chemical reactions of glycerol?
3. Discuss the effect of substituents on acidity of phenols. Out of methanol and phenol, which is more acidic and why?
4. Give the mechanism for Fries rearrangement and Reimer –Tieman reaction? 2×4=8

Section – B

5. How will you synthesise aldehyde and ketone from 1,3-dithane? What are the limitations of this reaction?
6. Discuss mechanism of following reactions:-
   (i) Knoevenagel condensation
   (ii) Mannich reaction
7. Discuss mechanism of following reactions:-
   (i) Baeyer-Villiger oxidation
   (ii) Clemmensen reduction
8. Discuss mechanism of following reactions:-
   (i) Meerwein Pondroff-Verley reduction
   (ii) Michael addition 2×4=8

Section – C

9. (i) The boiling points of alcohols are higher than those of corresponding alkanes having similar molecular weights. Why?
(ii) Comment upon the statement that 2,4,6-trinitrophenol is a very strong acid?
(iii) Why is α-hydrogen in aldehydes and ketones acidic in nature?
(iv) What is crossed aldol condensation?
(v) $NaBH_4$ is less vigorous but more selective reducing agent than $LiAlH_4$. Justify with example? 5×2=10