Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 09

B.Sc. (Non Medical) (Sem.–3)

ORGANIC CHEMISTRY-II

Subject Code : BSNM-301-18

M.Code : 76900

Date of Examination : 19-12-22

Time : 3 Hrs. **Max. Marks : 50**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying ONE marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write briefly :

a. Why does a tertiary alkyl halide not undergo SN2 reaction?

b. Vinyl halides are inert towards nucleophilic displacement reaction. Why?

c. What is Huckel's rule? Show the state of aromaticity of (i) cyclopentadienyl anions and cyclooctatetraene.

d. Show Kekule resonance structures and resonance hybrid of benzene. How does the resonance hybrid differ from cyclohexatriene?

e. What happens when glycol is treated with lead tetra acetate?

f. Compare the acidity of alcohols and phenols.

g. What is Wittig reaction? Suggest the synthesis of the following compound by Wittig reaction.

$$CH_3CH_2CH=CHCOCH_2CH_3$$

h. How LiAlH4 is used for the reduction of ketone? Give example.

i. How ketones are synthesized from nitriles?

j. Write a short note on mercuration.

SECTION-B

2. Nucleophilic aromatic substitution occurs by two mechanisms namely addition-elimination mechanism and elimination-addition mechanism. Explain with suitable example and mechanism.

3. What are σ and π complexes? Explain the mechanism of nitration and sulphonation of benzene.

4. Write a short note on :

   (i) Fries rearrangement

   (ii) Gatterman synthesis.

5. Discuss the mechanism of :

   (i) Wolff-Kishner reduction

   (ii) Baeyer-Villiger oxidation

6. Explain pinacol-pinacolone rearrangement.

SECTION-C

7. Differentiate the mechanisms and energy profile diagrams of SN2 and SN1 reactions.

8. Show the mechanism of following reactions

   (i) Reimer-Tiemann reaction,

   (ii) Cannizzaro reaction and

   (iii) Knoevenagel condensation.

9. How (i) nitro and (ii) methoxy groups determine the stability of ortho, meta or para substitution. Explain with mechanisms.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.