BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)
B. Tech. Sem - I CHEMICAL : WINTER- 2022
SUBJECT : ORGANIC CHEMISTRY-I

Day : Wednesday | Time : 10:00 AM-01:00 PM

Date : 11/1/2023 | W-24046-2022 | Max. Marks : 60

N.B.:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Use of non-programmable **CALCULATOR** is allowed.
4) Draw neat and labeled diagram **WHEREVER** necessary.
5) Assume suitable data if necessary.

Q.1 **a)** Write short note on Mesomeric effect. **(05)**

b) Give reasons: **(05)**

i) Formic acid is stronger than acetic acid.

ii) Cyclohexyl amine is stronger base than Aniline.

OR

Q.1 **a)** Define reactive intermediates. **(06)**
Give two synthesis methods of carboanions and discuss their relative stabilities with examples.

b) Write short notes on Claisen condensation. **(04)**

Q.2 **a)** Discuss Baeyer's strain theory. **(05)**
What are the strainless rings?

b) How does heat of combustion explain relative stability of cycloalkane? **(05)**

OR

Q.2 **a)** Write note on: i) Ring flipping ii) Locking of conformation **(05)**

b) Define Chirality, Enantiomers, Diastereomers, Racemic mixture. **(05)**

Q.3 **a)** Discuss the following reactions with mechanism of alkane. **(05)**
i) Halogenation ii) Nitration

b) State Markownikoff's rule. Give mechanism of addition of HBr to propene. **(05)**

OR

Q.3 **a)** Give two synthesis methods of alkynes. **(05)**

b) Give following conversions: **(05)**

i) Propyne to propanone ii) Propyne to propane

P.T.O.

Q.4 a) Define alcohols. Give classification of alcohols with examples. (04)

b) Give the preparation of primary, secondary and tertiary alcohol from Grignard's reagent. (06)

OR

Q.4 a) What are monohalogen derivatives of alkanes? (05)
Give the classification of monohalogen derivatives with suitable examples.

b) Give synthesis method of ethyl iodide from: (05)
i) Alkene ii) Alcohol

Q.5 a) Give following conversions: (05)
i) Propene to acetone
ii) Benzene to benzophenone

b) Give two synthesis methods of aldehydes with examples. (05)

OR

Q.5 Write note on: i) Halogenation of phenol (10)
ii) Carbonation of phenol
iii) Reimer-Tiemann reaction

Q.6 a) Write reaction of benzoic acid with the following reagents: (05)
i) R-Cl/$AlCl_3$ ii) PCl_3
ii) $LiAlH_4$ iv) Br_2/Cat

b) Write note on carboxylic acid and their derivatives. (05)

OR

Q.6 a) How will you convert the following compounds into corresponding carboxylic acid? (05)
i) 2-methyl 1-butanol iii) p-Bromo Cumene
ii) Toluene iv) Benzyl alcohol

b) Give synthesis methods of acetamide and ethyl benzoate. (05)

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