Shivaji College, University of Delhi Department of Chemistry INTERNALTEST B. Sc. (Life Science), Semester-I

Chemistry Test (Basic Concept of Organic Chemistry)

Time 1 hr M.M. 20

December 2023

Teacher: Dr. Nand Gopal Gis

Attempt all questions, Marks are assigned against questions.

Q1. Write the structure of product(s) formed in the following reactions:

12M

(i)
$$OH = \frac{1. CCI_4, NaOH(aq.)}{2. H_3O}$$

(iv)
$$(CH_3)_3CONa + CH_3CI$$
 (v) CH₃COONa CH₃COONa

$$(vi) \qquad \begin{array}{c} H \\ C - C - C - CH_3 \\ OH OH \end{array} \qquad \begin{array}{c} Conc.H_2SO_4 \\ OH OH \end{array} \qquad \begin{array}{c} (vii) CH_3CH_2MgBr \\ \hline 2. H_3O \end{array}$$

(vii)
$$CH_3CH_2MgBr$$

$$\begin{array}{c}
1. \ H_3C-C-CH_3 \\
\hline
2. \ H_3O
\end{array}$$

(viii)
$$H_3C-CH=CH-COOC_2H_5 + (CH_3)_2CHNO_2$$
 $OH(aq.)$

(ix)
$$H_3C$$
 CH_3 $Ba(OH)_2$ (aq.) heat

Q2. Arrange any three of following as mentioned against the questions. Also give 3×2M suitable reason in brief.

(Increasing order of stability)

- (b) F₃CCH₂OH F₂CHCH₂OH FCH₂CH₂OH CH₃CH₂OH (Decreasing acidic strength)
- (c) CH₃CHO PhCHO HCHO PhCOPh (Decreasing ease of nucleophilic addition reaction)





(Increasing stability order)





OH CH₃ (Increasing order of ease of ES reaction)

(i)
$$\begin{array}{c} CH_3 \\ H-C-OH \\ H-C-OH \\ CH_3 \end{array}$$
 Convert into staggered (ii) $\begin{array}{c} H_3CH_2C \\ H_3C \end{array}$ CN $\begin{array}{c} CN \\ H_3C \end{array}$ Assign $\begin{array}{c} E/Z \text{ configuration} \\ \hline E/Z \text{ configuration} \end{array}$ (iii) $\begin{array}{c} H_3C-CH \\ H_3C \end{array}$ $\begin{array}{c} H_3C-CH \\ H_3C \end{array}$ $\begin{array}{c} COOH \\ H_3C \end{array}$ Or $\begin{array}{c} COOH \\ CH_3 \end{array}$ Convert into Fischer projection and assign R/S configuration