Date Planned : __ / __ / __	Daily Tutorial Sheet-1	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration :_____

1. Identify C in the following reaction : $CH \equiv CH + CH_3MgBr \xrightarrow[-CH_4]{} A \xrightarrow[2.\ H_3O^+]{1.\ CO_2} B \xrightarrow{(O)} C$

(A) $HOOC-CH_2-COOH$ **(B)** $OHC-CH_2-COOH$

(C) $(COOH)_2$ **(D)** None of these

2. Which of the acids cannot be prepared by Grignard reagent?

(A) Acetic acid **(B)** Succinic acid **(C)** Formic acid **(D)** Benzoic acid

3. $CH_2(COOEt)_2 \xrightarrow[2.\ EtBr]{1.EtONa} A \xrightarrow[2.\ H_3O^+]{1.\ OH^-} B \xrightarrow[2.\ H_3O^+]{1.\ \Delta} C$

The compound (C) is :

(A) $CH_3CH_2CH_2CHO$ **(B)** CH_3CH_2CHO

(C) $CH_3CH_2CH_2COOH$ **(D)** CH_3CH_2COOH

4. Which of the following on oxidation can form carboxylic acid ?

I. CH_3CH_2OH **II.** $(CH_3)_2CHOH$ **III.** $C_6H_5CH_2OH$

(A) Only III **(B)** Only I **(C)** Both I & III **(D)** None of these

5. Which of the following will not produce benzoic acid by oxidation with alkaline $KMnO_4$?

(A) $Ph-CH_3$ **(B)** $Ph-CH_2-Cl$ **(C)** $Ph-CH_2CH_3$ **(D)** $Ph-\overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}}-CH_3$

6. A halogen compound A on hydrolysis with dilute alkali followed by acidification gives acetic acid. The compound A is :

(A) $ClCH_2CH_2Cl$ **(B)** CH_3CHCl_2

(C) $ClCH_2CHCl_2$ **(D)** CH_3CCl_3

7. The compound (D) obtained through the following sequence of reactions is :

$$C_2H_5Br \xrightarrow{\text{Alc. KOH}} A \xrightarrow[CCl_4]{Br_2} B \xrightarrow[\text{(Excess)}]{KCN} C \xrightarrow{H_3O^+} D$$

(A) Succinic acid **(B)** Malanic acid **(C)** Maleic acid **(D)** Oxalic acid

8. P and Q in the given reaction sequence: $R-C \equiv N \xrightarrow{H_3O^+} P \xrightarrow[HBF_4]{\text{diazomethane}} Q$, are given by the set :

(A) Carboxamide, Carbonitrile **(B)** Carboxylic acid, Carbonitrile

(C) RCOOH, $RCOOCH_3$ **(D)** $RCONH_2$, $RCOCH_3$

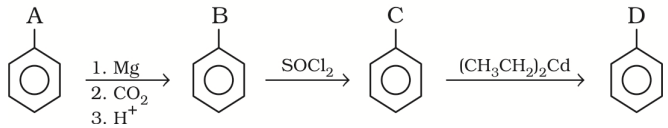
9. The gas evolved on heating alkali formate with soda-lime is :

(A) CO **(B)** CO_2 **(C)** hydrogen **(D)** water vapour

10. An organic compound is boiled with aqueous potash. The product is cooled and acidified with HCl. A white solid separates out. The starting compound may be :

(A) ethyl benzoate **(B)** ethyl formate **(C)** ethyl acetate **(D)** methyl acetate

11. Consider the following sequence of reactions.



Identify A, B, C and D.

(A) –F, – COOH, – $COCH_3$, – $OCH_2CH_2CH_3$ **(B)** – CHO, – COOH, – COCl, – $COCH_2CH_3$

(C) –Br, COOH, – COCl, – $COCH_2CH_3$ **(D)** –Br, COOH, – COCl, – CHO

12. Cinnamic acid is formed when C_6H_5-CHO condenses with $(CH_3CO)_2O$ in presence of :

(A) concentrated H_2SO_4 **(B)** sodium acetate

(C) sodium metal **(D)** anhydrous $ZnCl_2$

***13.** Formic acid can be prepared from which of the following reaction sequence ?

(A) $(COOH)_2 \xrightarrow[283\,K]{\text{Glycerol}}$ **(B)** $CO + NaOH \xrightarrow[\text{High P}]{\text{High T}} \xrightarrow{H^+}$

(C) $CH_3OH \xrightarrow[H^+]{KMnO_4}$ **(D)** $CHCl_3 \xrightarrow{\text{aq. KOH}} \xrightarrow{H^+}$

14. When acetamide is hydrolysed by boiling with acid, the product obtained is :

(A) Acetic acid **(B)** Ethyl amine **(C)** Ethanol **(D)** Acetamide

***15.** Which of the following are correct methods for the preparation of propanoic acid ?

(A) $H_3C-CH=CH_2 \xrightarrow{HBr} \xrightarrow[\text{Ether}]{Mg} \xrightarrow[H_3^+O]{CO_2}$

(B) $H_3C-C\equiv CH \xrightarrow[H_2O_2,\ ^-OH]{BH_3\cdot THF} \xrightarrow{KMnO_4}$

(C) $H_2C=CH_2 \xrightarrow{HBr} \xrightarrow[\text{Ether}]{Mg} \xrightarrow[H_3^+O]{CO_2}$

(D) $H_3C-CH=\underset{\displaystyle CH_3}{\overset{\displaystyle |}{C}}-CH_3 \xrightarrow[H_2O]{O_3}$