DPP
DAILY PRACTICE PROBLEMS

**CLASS : XIIth** | **SOLUTIONS** | **SUBJECT : CHEMISTRY**
**DATE :** | **DPP NO. : 3**

1 **Topic :-ORGANIC CHEMISTRY - SOME BASIC PRINCIPLES AND TECHNIQUES** **(c)**

Kejldahl's method is used for the estimation of nitrogen. The organic compound is heated with conc. $H_2SO_4$ in presence of $K_2SO_4$ (used to elevate boiling point of $H_2SO_4$) and $CuSO_4$ (used as catalyst) to convert all the nitrogen into $(NH_4)_2SO_4$.

2 **(c)**

Acetone and methanol have nearly equal boiling point. thus, they are separated by fractional distillation

3 **(b)**

Follow IUPAC rules.

4 **(c)**

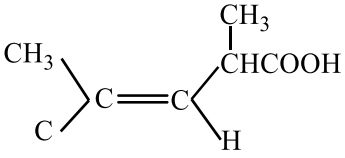
The oxygen atom in phenol has more dominating resonance effect than inductive effect. Increase in charge separation decreases the stability of a resonating structure

Stability of resonating structure in decreasing order will be

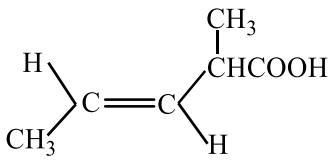
$$I > II \equiv IV > III$$

5 **(c)**

The acid exist in *cis* and *trans* forms :




and



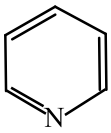


Also it has asymmetric carbon atom $CH_3CH = HCOOH$.

6 **(a)**

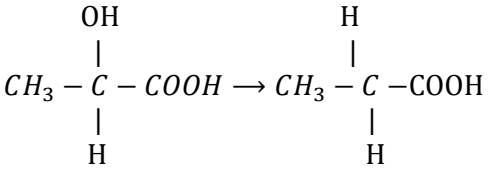
Follow the mechanism of esterification.

7 **(b)**

Pyridine  is a heterocyclic compound having six membered ring formed with C and N-atoms.

8 **(a)**

When – OH group of lactic acid is replaced by H, then chiral carbon is lost.



lactic acid

∴Its optical activity is lost.

10 **(a)**

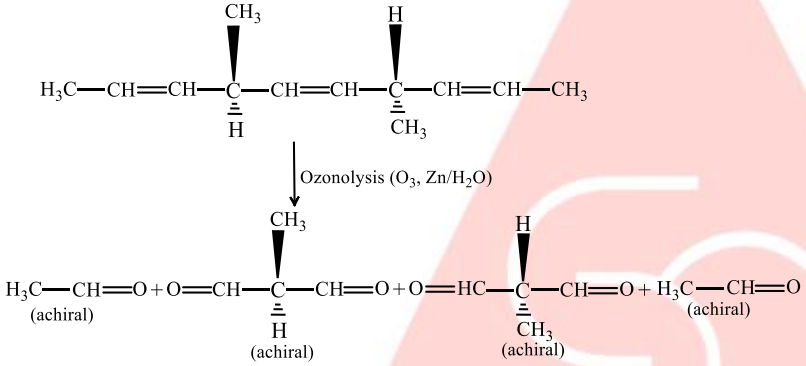
2-butene exhibit rotamers. Rotamers are the isomers formed by restricted rotation.

11 **(d)**

It contains lone pair electron on N atom.

12 **(a)**

Ozonolysis of the compound may be given as :




13 **(b)**

2-aminopentane and 3-aminopentane; Position is different.

15 **(c)**

$$\% \text{ of H} = \frac{2}{18} \times \frac{\text{weight of } H_2O}{\text{weight of organic compound}} \times 100$$

$$= \frac{2}{18} \times \frac{0.9}{0.5} \times 100 = 20\%$$

∴ The percentage of carbon $= 100 - 20 = 80$ %

16 **(b)**

$o -$ and $p$-directing groups facilitate $S_E$ reactions whereas m-directing groups deactivate benzene ring for $S_E$ reactions.

17 **(a)**

(+) and (-) tartaric acid does not possess any element of symmetry.

18 **(b)**

A molecule having doubly bonded carbon atoms shows geometrical isomerism only if both the doubly bonded carbon have altogether different group, $i.e.$, $_{ba}C \equiv C_{ab}$ or $_{ab}C = C_{ac}$ or $_{dc}C = C_{ab}$.

19 **(c)**

The chemical formula of thiourea is $NH_2CSNH_2$ so here $Na_2S$, NaCN and NaCNS will be formed but not $Na_2SO_4$

20 **(a)**

A white precipitate with am. $AgNO_3$ confirms the presence of terminal alkyne.

| ANSWER-KEY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Q. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **A.** | C | C | B | C | C | A | B | A | C | A |
| | | | | | | | | | | |
| Q. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| **A.** | D | A | B | D | C | B | A | B | C | A |
| | | | | | | | | | | |