DPP
DAILY PRACTICE PROBLEMS

CLASS : XIIth
DATE :

SOLUTION

SUBJECT : CHEMISTRY
DPP NO. : 3

Topic :-ORGANIC CHEMISTRY - SOME BASIC PRINCIPLES AND TECHNIQUES

1   **(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
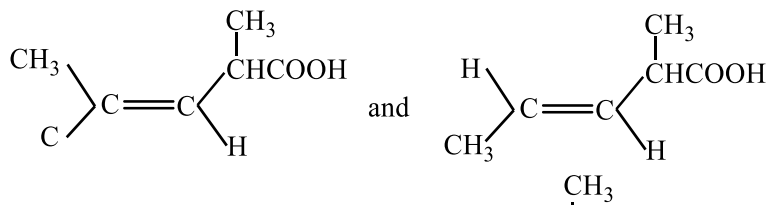
3   **(b)**
Follow IUPAC rules.

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 :
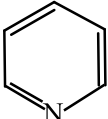
   Also it has asymmetric carbon atom $CH_3CH = \overset{\overset{\displaystyle CH_3}{|}}{H}COOH$.

6   **(a)**
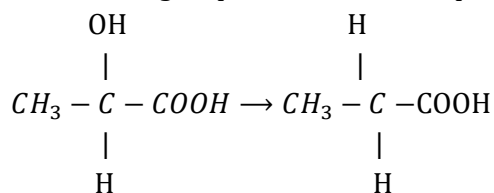   Follow the mechanism of esterification.

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.

$$CH_3 - \overset{\overset{\displaystyle OH}{|}}{\underset{\underset{\displaystyle H}{|}}{C}} - COOH \rightarrow CH_3 - \overset{\overset{\displaystyle H}{|}}{\underset{\underset{\displaystyle H}{|}}{C}} - COOH$$

lactic acid

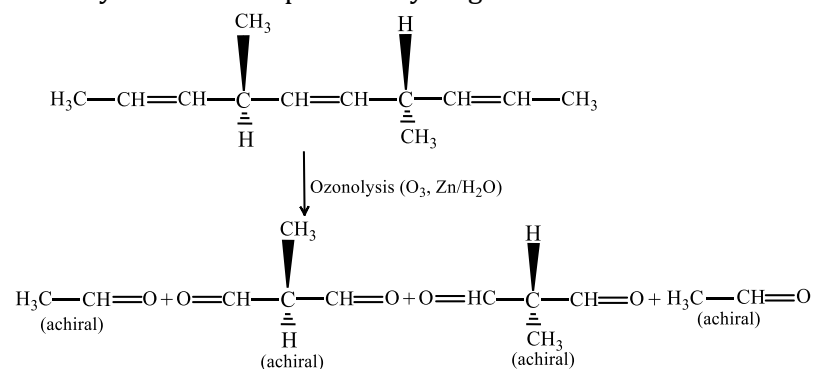∴Its optical activity is lost.

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