

SOLUTIONS

Module - 5 / JEE-2021

In-Chapter Exercises

Chemistry

Organic Qualitative and
Quantitative Analysis

EXERCISE

1.(B)
$$OH$$
 $COOCH_2CH_3$ OH $COOH$ $+ CH_3CH_2OH$ $+ CH_3CH_2OH$ with FeCl₃ $($ gives yellow ppt $)$ with $1_2/NaOH$ $)$

2.(B) Organic compound which contains both N and S gives red colour in Lassaigne's test

3.(D) HO
$$\longrightarrow$$
 H+ClN₂ \longrightarrow Weakly Basic HO \longrightarrow N-N \longrightarrow P-hydroxy azobenzene (orange - red dye)

4.(D) Aldehydes give positive Tollen's test whereas ketone donot gives positive Tollen's test.

5.(A)
$$(C_7H_5N)$$
 (Carbylamine reaction) (C₇H₅N) offensive smell (B)

7.(B)
$$NH_2$$
 Weakly Acedik NH_2 $N=N$ (dyeTest)

Solutions to Q. 8 to 10. 8.(C)

[JEE-2021/Module - 5] Chemistry



$$\begin{array}{c} O \\ C - CH_3 \\ \hline \\ (A) \end{array} \\ \begin{array}{c} I_2 + NaOH \\ \hline \\ (A) \end{array} \\ + \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (yellow \ ppt.) \end{array} \\ \begin{array}{c} COONa \\ \hline \\ (E) \end{array}$$

9.(A) Benzoic acid gives buff coloured precipitate with FeCl₃.

$$\begin{array}{c} {\rm 3C_6H_5COOH} + {\rm FeCl_3} & \longrightarrow ({\rm C_6H_5COO})_3 \; {\rm Fe} \, + \, {\rm 3HCl} \\ {\rm Buff \; colour} \end{array}$$

10.(B)

11.(D) A-4, B-1, C-3, D-2

Alcohol (1°, 2°, 3°) distinguished by the Lucas reagent (A - 4)

Ethanal give positive Iodoform test while Methanal does not (B - 1)

Terminal alkynes gives white precipitate with ammonical silver nitrate (C - 3)

Unsaturated compounds decolourize the red colour of Br₂/H₂O (D - 2)

12.(B) Unsaturated compounds decolourize the red colour of Br_2/H_2O therefore 1-Butyne and 2-Butyne cannot be distinguished by Br_2/H_2O test.