CHEMISTRY

21. Carbohydrates don't give a precipitate with NaHSO₃. The sodium bisulphate addition compound of aldehydes and ketones gives back the aldehyde or ketone on hydrolysis. The atom connected to carbonyl carbon is S in SO₃Na.

22.

$$CH_2 = C \xrightarrow{O - COCH_3} \qquad \xrightarrow{H_3O^+} CH_2 = C \xrightarrow{CH_3} + CH_3COOH$$

$$CH_3 - C - CH_3$$

$$CH_3 - CH = CH - OCOCH_3 \xrightarrow{H_3O^+} CH_3 - CH = CH - OH$$

$$CH_3COOH + CH_3CH_2CHO$$

Acetone and propanal can be distinguished with I_2 / NaOH, acetone gives Iodoform but not propanal. Propanal reduces Fehlings solution, but not acetone.

23. Ethyl chloride

$$\xrightarrow{KCN} CH_3CH_2CN \qquad 2C_6H_5CHO \xrightarrow{KCN} C_6H_5 - CHCOC_6H_5$$
OH Benzoin

$$\begin{array}{c}
CI \\
NO_2
\end{array}$$

$$\begin{array}{c}
KCN \\
NO_2
\end{array}$$

$$\begin{array}{c}
NO_2
\end{array}$$

24.

$$CH_3COCH_3 \xrightarrow{C_6H_5NH_2} CH_3 - C = N.C_6H_5$$

$$CH_3 C = O + H_2NNH_2 \rightarrow CH_3$$

$$CH_3 CH_3 CH_3$$

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- 25. Fehlings A CuSO₄
 Fehlings B alkali Rochelle salt
- 26. a, is pcc b is Jones reagent c is M.P.V reduction. All these are reagents for the reaction KMnO₄ affects hydroxylation of double bond also.
- 27. Oximes of CH₃CHO and CH₃COC₂H₅ exhibit geometrical isomerism and exist as diastereomers
- 28. |b| gives a five or seven membered ring

$$C_6H_5 - C - C - H \xrightarrow{OH^-} C_6H_5 - CH - COO^-$$

$$\parallel \quad \parallel \quad \parallel$$
O O O OH

31.

30.

$$O = C$$

$$CH_2$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

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32.

$$C_6H_5 - C - CHO + C_6H_5 - C - H$$
 $+H$
 $C_6H_5 - C - CH - CHO$
 $OH C_6H_5$
 $A-H_2O$
 $C_6H_5 - CH CH - CHO$
 C_6H_5

B and C Don't undergo aldol

D give more than one product

33. It is perkins reaction

$$C_6H_5-CHO+\left(CH_3CO\right)_2O\to C_6H_5CH=CHCOOH$$

34.
$$C_6H_5 - CH = CH - COOH \xrightarrow{1.SOCl_2 \over 2.H_2, Pd-c}$$

$$CH_2$$
 $C = O$ $C = O$

- 35. b. with Phenolic ketone gives iodoform as it has COCH₃ group
- 36. c. With –CH₂CHO reduces ammonical AgNO₃
 With phenolic OH group gives colour with FeCl₃.

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