76.(ACD) **(A)** : Fehling solution gives red ppt. with all aldehydes (but not with benzaldehyde).

(B) : 2, 4 DNP gives orange ppt. with all carbonyl compounds.

(C) : Diethyl amine is a secondary amine, C_6H_5CHO will not react as it does not have α hydrogen CH_3CHO will form enamine with diethylamine.

(D) : KCN/EtOH gives Benzoin condensation with benzaldehyde only.

77.(CD) Tollen's reagent : amm. $AgNO_3 \equiv [Ag(NH_3)_2OH] \equiv Ag_2O$

$$\underset{\text{(All aliphatic aldehydes)}}{RCHO} \xrightarrow{Ag_2O} RCOOH + \underset{\text{white ppt (silver mirror test)}}{Ag\downarrow}$$

(A) Both CH_3CHO and $HCHO \longrightarrow Ag\downarrow$

(B) $CH_3CHO \longrightarrow Ag\downarrow$

$C_6H_5CHO \longrightarrow Ag\downarrow$ (Also respond to Tollen's Test)

(C) $CH_3COOH \xrightarrow[AgNO_3]{Amm}$ No reaction

$HCOOH \longrightarrow Ag\downarrow + CO_2 + H_2O$

(Among acids, only formic acid is oxidised by Tollen's reagent)

(D) C_6H_5CHO responds to Tollen's test, but CH_3COCH_3 does not.

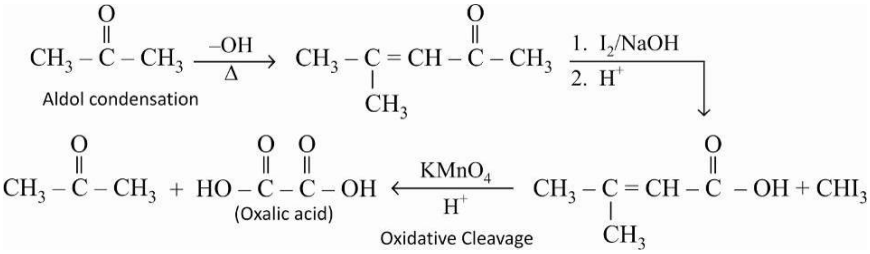
78.(BC) β-hydroxy carbonyl compound is called as an Aldol. Aldehydes and ketones having α-H forms aldol in alkaline medium. (B) & (C) is correct option as others do not have α-H.

79.(A) MnO_2 oxidises unsaturated alcohols to give α, β-unsaturated carbonyl compounds.

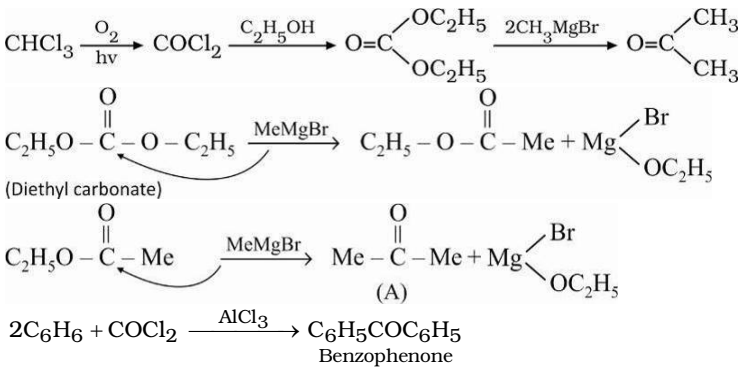
$$CH_3CH_2CH=CH-CH_2OH \xrightarrow{MnO_2} CH_3CH_2\overset{\beta}{C}H=\overset{\alpha}{C}H-CH=O$$

CrO_3 in CH_3COOH and H_2CrO_4 in acetone oxidises 2° alcohols to ketones.

80.(B)



81.(C)

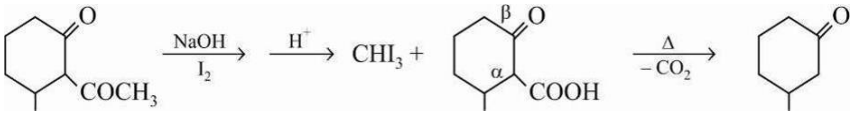


$$2C_6H_6 + COCl_2 \xrightarrow{AlCl_3} \underset{\text{Benzophenone}}{C_6H_5COC_6H_5}$$

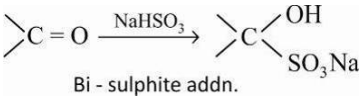
82.(ABC) Identify aldehydes with no α-hydrogen atom (a condition for Cannizzaro reaction). (B), (C) and (D) all do not have α-H. However (D), CCl_3CHO would prefer to give Chloroform reaction with NaOH.

83.(CD) Note : $R-\overset{\beta}{C}O\overset{\alpha}{C}H_2COOH \xrightarrow[-CO_2]{\Delta} R\,COCH_3$; $R-\overset{\beta}{C}H_2\overset{\alpha}{C}OCOOH \xrightarrow[-CO]{\Delta} R\,CH_2COOH$

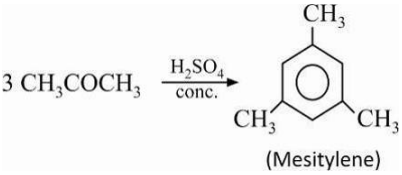
β-Keto acid — A Ketone ; α-Keto acid — An acid

Option (D) is correct : 

Note : $\frac{NaOH}{I_2}$ (≡ NaOI) Observe that option (C) is also correct.

84.(B) HSO_3^- is a large size nucleophile, hence in the addition product there is too much steric crowding. 

All aldehydes give this addition reaction however among ketones, only acetone, acetophenone and cyclohexanone give this addition. Hence options (II) and IV are not correct.

85.(ABC) 

A, B, C, are correct options.

Note: S_E (Electrophilic Substitution) are little difficult as '*ortho*' position (w. r. t all CH_3 group) is sterically hindered.