

		Daily Tutorial Sheet-8	Level-2	
96.(C)	Ph – CH ₂ CHO	$ \xrightarrow{SeO_2} \xrightarrow{ Ph - C - C - H } Phenyl glyoxal $	O O OH O $Ph - C - C - H \xrightarrow{1. \text{ KOH}} Ph - CH - C - O$ Internal cannizzaro reaction	Н

- **97.(C)** Ketols from self-condensation of ketones are less stable due to steric crowding. Hence, the extent of equilibrium lies more in backward direction. So if we remove the ketol by heating in base to form α , β unsaturated ketone, then equilibrium shifts in forward direction.
- 98.(C) $CH_3 C CH_2CH_3 + CH_3 C H \xrightarrow{OH^-}$
 - Note that here we have visualise both self and cross aldol condensation products.
 - \triangleright 2-Butanone has 2 types of α -H atoms giving 2 aldol (self) products.
 - Acetaldehyde gives 1 aldol (self).
 - \succ 2-Butanone and acetaldehyde will give 3 cross aldol products as 2-Butanone has 2 different types of α -H atoms.

Try to write structures of all 6 aldols.

'A' should be an aldehyde without α – hydrogen (Cannizzaro reaction). It is very likely that 'A' is HCHO. Also note that two moles of 'A' should be produced \Rightarrow 'X' is a diene.

As 'B' resists oxidation, it must be a ketone. Hence structure of X should be :

99.(B)
$$(X)$$
 (X) (A) (A) (B) (A) (B)

 $B \xrightarrow{OH^{-}} R$ [Visualise intramolecular aldol reaction]

Ontion (B) is corrected
$$O(B)$$
 $O(B)$ $O(B)$

100.(C)
$$O_3$$
 O_3 O_4 O_5 O_6 O_6 O_6 O_7 O_8 $O_$



- **102.(B)** In Bisulphite addition (HSO_3^- : as nucleophile), only aldehydes and few ketones such as acetone, acetophenone and cycloalkanones react.
- **103.(B)** Both acids and bases can bring aldol condensation (refer module). In presence of base E1cB dehydration occurs.
- 104.(B) Aldehydes with α -Hydrogen, form enolate (resonance stabilised) ion with bases, so no Cannizzaro reaction, H^- (Hydride) transfer is a crucial step in Cannizzaro reaction.
- **105.(C)** Tollen's reagent is a mild oxidizing agent and that is why it simply oxidises aldehyde and benzaldehydes but not ketones.