Daily Tutorial Sheet-5	Level-1

61.(C) This is Perkin Reaction. So (X) is clearly an anhydride with two $\alpha-H$ atoms $(CH_3CO)_2O$

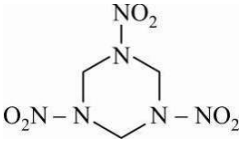
62.(B) $H_3C-\underset{|}{\overset{CH_3}{CH}}-CHO$: It has $\alpha-H$ atom.

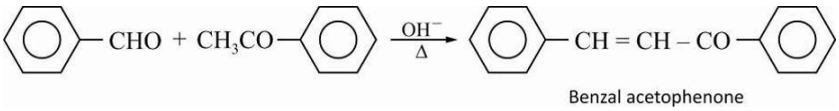
63.(D) Aldol condensation of CH_3CHO : $2CH_3CHO \xrightarrow{OH^-} CH_3-\underset{|}{\overset{OH}{C}}H-CH_2CHO$
3-hydroxybutanal

64.(B) Lucas test is for distinction among 1°, 2° & 3° alcohols.

65.(B) All aldehydes (except Benzaldehyde) give Fehling solution test.
HCOOH (the only acid) also responds positively to Fehling & Tollen's reagent test.

66.(D) Urotropine on nitration gives RDX (an explosive).



67.(A) 
("Claisen-Schmidt reaction")
Benzal acetophenone

68.(C) $CH_3CHO + 3HCHO \xrightarrow{NaOH} (HOCH_2)_3C-CHO$

$(HOCH_2)_3C-CHO + HCHO \xrightarrow{NaOH} (HOCH_2)_4C + HCOONa$

69.(B) Observe that it involves reduction of carbonyl group to methylene only. We will have to use Clemmensen's reagent because Wolf Kishner reagent will hydrolyse ester group and will substitute $-Cl$ group by $-OH$ group.

70.(A) Tischenko reaction : $CH_3CHO \xrightarrow{(EtO)_3Al} CH_3-CO-O-CH_2CH_3$

71.(D) $H_2/Pd-BaSO_4$: Rosenmund reduction ; DIBAL–H : Di – isobutyl aluminium hydride
$LiAlH(t\text{-}BuO)_3$: Lithium aluminium tert-butoxide hydride
All above reducing agents reduce RCOCl to RCHO. They do not reduce aldehydes further

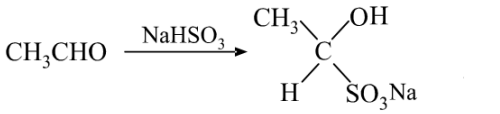
72.(A) $(CH_3)_3C-CHCl_2 \xrightarrow{NaOH} (CH_3)_3CCH(OH)_2 \xrightarrow{-H_2O} \underset{\text{no } \alpha-H}{(CH_3)_3C-CHO}$ (Baeyer-Villiger oxidation)

73.(B) $CH_3-CH_2-\overset{O}{\overset{||}{C}}-CH_3 \xrightarrow{PhCO_3H} CH_3CH_2-O-\overset{O}{\overset{||}{C}}-CH_3$
(Oxygen adds to more alkylated or bigger alkyl group side).

$CH_3CH_2-O-\overset{O}{\overset{||}{C}}-CH_3 \xrightarrow{H_3O^+} CH_3CH_2OH + CH_3COOH$

74.(ABD) It is given only by aldehydes with no $\alpha-H$. Rest of statements are true for Cannizzaro reaction.

75.(A) $NaHSO_3$ does not react with CH_3CH_2OH. whereas it reacts with CH_3CHO and a white solid crystallizes out.


(Bi-sulphite addition product)