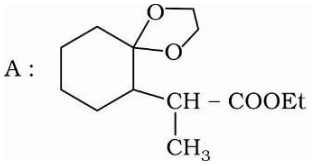
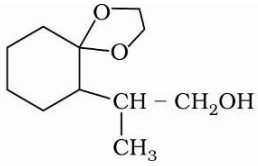
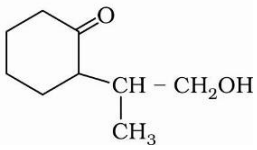
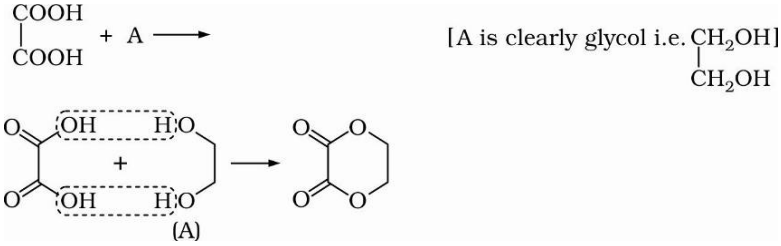
Daily Tutorial Sheet-8	Level-2

96.(B) A :  B :  C : 

97.(A) $R-O-R \xrightarrow{HI(excess)} 2R-I$

1, 2-iodide are unstable and does not exist.

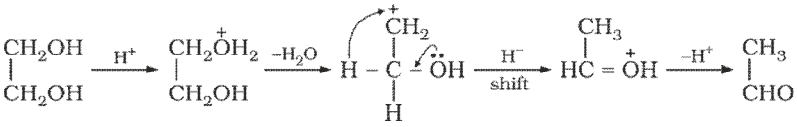
$$I-CH_2-CH_2-I \xrightarrow[-I_2]{} CH_2=CH_2 \xrightarrow{HI} CH_3CH_2I$$

98.(D) 

[A is clearly glycol i.e. $\begin{matrix}CH_2OH\\|\\CH_2OH\end{matrix}$]

(A)

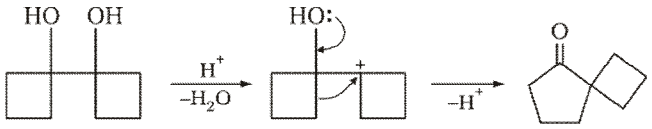
Now, A $\xrightarrow[H_2SO_4]{conc.}$ B (Visualise Pinacol - Pinacolone type rearrangement)



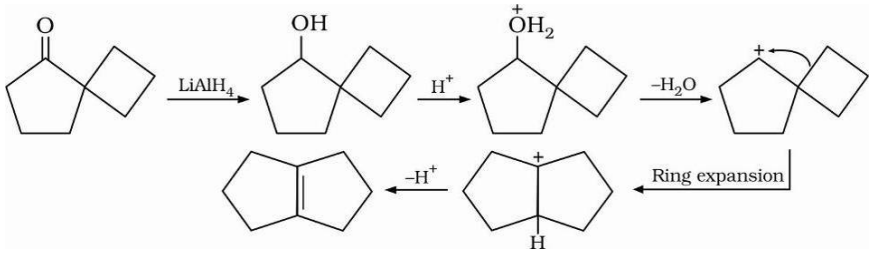
99.(D) Excess of alcohol will force the reaction (clearly) in forward direction i.e. acetal formation.

Use of dry acid does not allow hydrolysis of acetal back to aldehyde.

100.(C) Visualise pinnacol-pinnacolone rearrangement to form (A)



During pinnacol-pinnacolone rearrangement, visualise ring expansion (migration) to form a 5-C ring.



101.(BD) Examine all the choices :

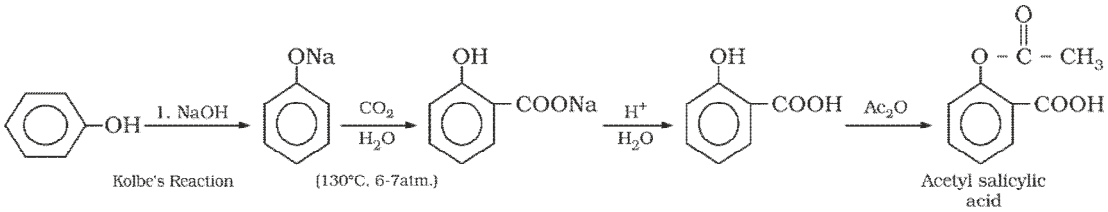
(A) $C_2H_5OH \xrightarrow{HI} C_2H_5-I \xrightarrow[ether]{Mg} C_2H_5MgI \xrightarrow{H_2O} C_2H_6 \xrightarrow[2.\ EtBr]{1.\ Na}$ No reaction

(B) II : $C_2H_5MgBr \xrightarrow[H_3O^+]{HCHO} C_2H_5-CH_2OH \xrightarrow[2.\ EtBr]{1.\ Na} \underset{\text{Ethylpropyl ether}}{C_2H_5CH_2-OEt}$

(C) $C_2H_5OH \xrightarrow[140°C]{H^+} C_2H_5 - O - C_2H_5$ diethyl ether

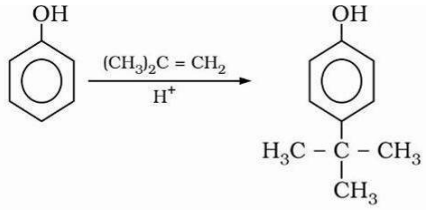
(D) $C_2H_5OH + CH_3CH_2CH_2OH \xrightarrow[140°C]{H^+} C_2H_5OCH_2CH_2CH_3$

102.(D)

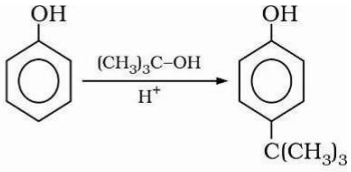


103.(ABC) Examine all choices.

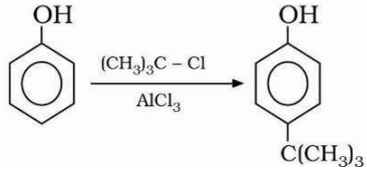
(A)



(B)

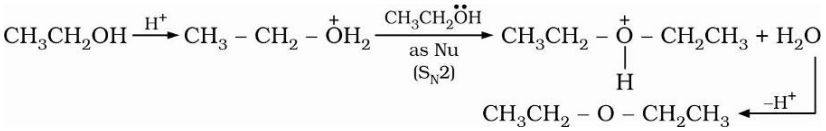


(C)



The correct options are : A, B, C. Note that all these reactions are Friedal craft alkylation, with alkyl carbocation as an electrophile.

104.(AC)



Hence A, C are correct options.

105. **[A-q, t]** **[B-r, s]** **[C-p, r, s]** **[D-p]**

(A) Phenol $\xrightarrow{FeCl_3}$ violet colour (Typical test of phenol). It is soluble in NaOH.

(B) EtOH is oxidised easily by $Cr_2O_7^{2-}/H^+$ being 1° alcohol

$$\underset{\text{orange}}{Cr_2O_7^{2-}} + H^+ + EtOH \longrightarrow \underset{\text{green}}{Cr^{3+}} + CH_3COOH$$

$EtOH \xrightarrow[OH^-]{I_2} CHI_3 \downarrow$; gives iodoform test

(C) $Ph\underset{\displaystyle OH}{\underset{|}{C}}H - CH_3$ (2° alcohol give white turbidity with $ZnCl_2/HCl$ in 3 - 5 min unlike 1° ROH)

- Since it has group $CH_3 - CH(OH)^-$ it will give iodoform test.
- It is oxidised to ketone by $Cr_2O_7^{2-}/H^+$

(D) $Me_3C - OH \longrightarrow$ 3° alcohols gives white turbidity instantly with $ZnCl_2/HCl$

- 3° alcohols resist oxidation