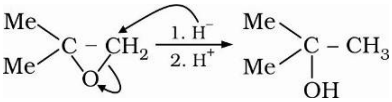
Daily Tutorial Sheet-4	Level-1

46.(D) $\underset{(A)}{Et-O-Me} \xrightarrow[2\text{ mole}]{HI} \underset{(Y)}{EtI} + \underset{(X)}{MeI}$

$EtI \xrightarrow{NaOH(aq)} \underset{(Z)}{EtOH} \xrightarrow[I_2]{NaOH} CH_3CHO \xrightarrow[I_2]{NaOH} \underset{\text{yellow ppt.}}{CHI_3\downarrow}$

47.(D) $Me_3C-O-Me \xrightarrow{HI} Me_3C-\overset{+}{\underset{|}{O}}(H)-Me \xrightarrow{S_N1} MeOH + Me_3C^+ \xrightarrow{I^-} Me_3C-I$

48.(C) Here it is base catalysed ring opening. So watch for steric factors.



49.(C) In Oxy-mercuration-Demercuration, use of alcohol or phenol instead of H_2O with THF produces corresponding ether. In (A), PhO^- will do elimination as substrate is 3° BuCl.

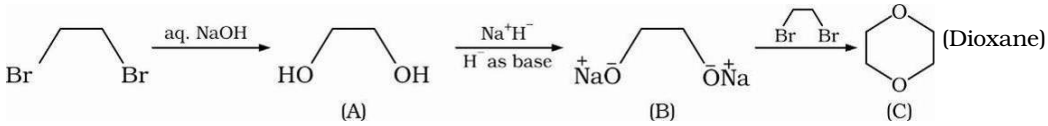
50.(B) **(I)** will give E2 product as the substrate is 2° RX.

(II) will give S_N2 product since substrate has no β-H and it is 1° benzyl chloride.

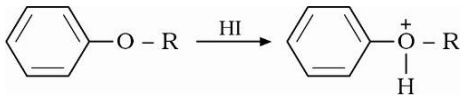
51.(C) $\underset{\begin{matrix}|\\OH\end{matrix}\quad\begin{matrix}|\\OH\end{matrix}\quad\begin{matrix}|\\OH\end{matrix}}{CH_2-CH-CH_2} \xrightarrow{KHSO_4} \underset{\text{acryl aldehyde (Acrolein)}}{H_2C=CHCHO}$ (Remember it as fact)

52.(A) $\underset{\begin{matrix}|\\OH\end{matrix}\quad\begin{matrix}|\\OH\end{matrix}\quad\begin{matrix}|\\OH\end{matrix}}{CH_2-CH-CH_2} \xrightarrow{PCl_5} \underset{\begin{matrix}|\\Cl\end{matrix}\quad\begin{matrix}|\\Cl\end{matrix}\quad\begin{matrix}|\\Cl\end{matrix}}{CH_2-CH-CH_2}$

53.(D)

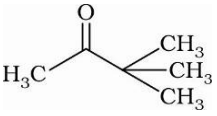


54.(B)

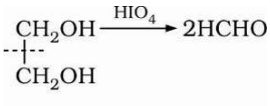


Now bond between benzene ring and oxygen cannot be broken due to partial double bond character (+M) effect of OMe) so phenol is one of the product in cleavage of aromatic ether.

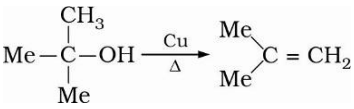
55.(B) A : $\underset{\begin{matrix}|\\HO\end{matrix}\quad\begin{matrix}|\\OH\end{matrix}}{\begin{matrix}H_3C\quad CH_3\\|\quad\quad|\end{matrix}\\CH_3-C-C-CH_3}$ (Visualise reductive hydrolysis of ketones to give pinnacols)

B :  (Visualise pinnacol-pinnacolone rearrangement)

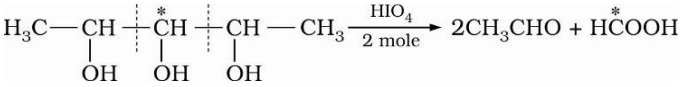
56.(B) $\underset{\begin{matrix}|\\CH_3\end{matrix}}{\begin{matrix}OH\\|\\CH_3CH\end{matrix}-\begin{matrix}OH\\|\\C\end{matrix}-CH_3} \xrightarrow{HIO_4} CH_3CHO + O=C\begin{matrix}CH_3\\CH_3\end{matrix}$

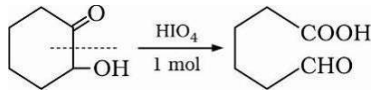
57.(ABCD) **(A)**  (True)

(B) $RCH_2OH \xrightarrow[\text{orange}]{Cr_2O_7^{2-}/H^+} \underset{\text{green}}{Cr^{3+}} + RCOOH$ (True)

(C)  (True)

(D) CH_3OH : Methyl alcohol is called as wood spirit and also called as carbinol (True)

58.(AC) 

B is : 

Note **:** B could have been compound given in option D (but it requires 2 mol of HIO_4 for product)

59.(D) A, C give ketones and B will give alcohol.

60.(A)