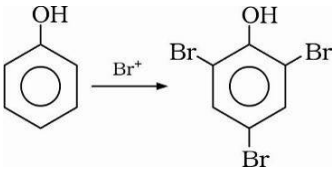
Daily Tutorial Sheet-3	Level-1

31.(D) $5KBr + KBrO_3 + 6HCl \longrightarrow 3Br_2 + 3H_2O + 6KCl$ **[Read solution to Q.87 for more details]**

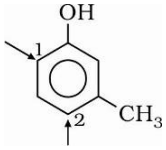
$Br_2 + \underset{\text{(Polar)}}{H_2O} \longrightarrow Br^+$ (will act as strong E^+)

$C_6H_5OH \xrightarrow{H_2O} C_6H_5O^-$ (Phenoxide has a highly activated ring)

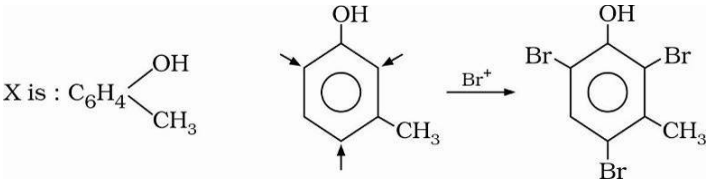


32.(A) Salicylic acid is a very strong acid as compared to phenol so it reacts with $NaHCO_3$ to give off CO_2.

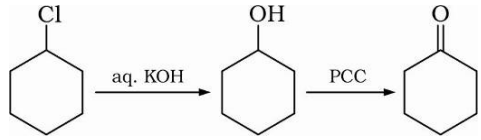
33.(A) Dinitration of 3-Methylphenol will take place at positions 1 and 2 since these are activated due to +M effect of –OH group and +H effect of CH_3 group.



34.(C) soluble $\xleftarrow{NaOH}$ C_7H_8O $\xrightarrow{NaHCO_3}$ insoluble $\Rightarrow$ it is phenol.



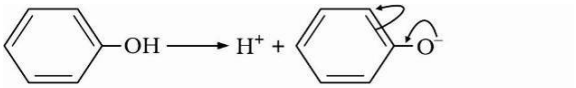
35.(A)



36.(B) Apart from Phenol, rest are strong acids which give off CO_2 with $NaHCO_3$.

37.(C) PCC oxidises 1°-alcohols into aldehydes and 2°-alcohols into ketones. It does not oxidise 3°-alcohols.

38.(C)



(phenoxide ion is resonance stabilised)

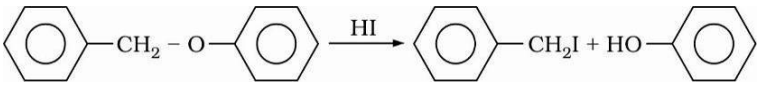
- $ROH \longrightarrow H^+ + RO^-$ (alkoxide is not stabilised)

39.(D) Benzene sulphonic acid and p-nitrophenol are strong acids, so they liberate CO_2 with $NaHCO_3$.

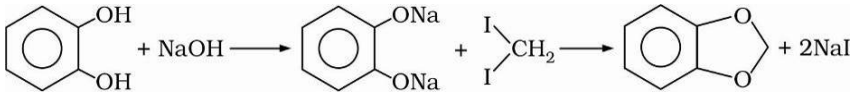
40.(C) Grignard reagents are stable in ether as they don't have acidic hydrogen like alcohols and water. Grignard reagent act as nucleophile with electrophilic substrates like esters, aldehydes, ketones and cyanides.

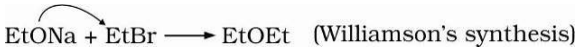
41.(D) As ethers do not show H-bonding as compared to alcohol, their boiling point is very less than those of alcohols. Boiling point of diethyl ether = 34°C.

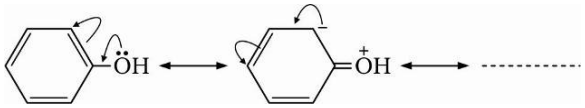
42.(A)



The bond between carbon atom of ring and oxygen is strong due to partial double bond character, so it cannot be broken to give aryl halide.

43.(A) 

44.(B) 

45.(A) 

Due to lone pair over oxygen, –OH group exerts +M effect and activates the ring towards electrophilic substitution.