

Daily Tutorial Sheet 9 Level - 2

$$\begin{tabular}{ll} \textbf{106.(A)} & 4 \mathrm{NH}_3(g) + 5 \mathrm{O}_2(g) & \xrightarrow{\mathrm{Pt}} & 4 \mathrm{NO}(g) \\ & 4 \mathrm{NO}(g) + & \mathrm{O}_2 & \xrightarrow{-25^\circ \mathrm{C}} & 2 \mathrm{NO}_2(g) \\ & & & & \\ \end{tabular}$$

$$H_2O + NO_2 \longrightarrow HNO_3 + NO$$

$$\textbf{107.(C)} \quad \text{H}_2\text{O} + 2\text{NO}_2 \longrightarrow \text{H}\text{NO}_3 + \text{H}\text{NO}_2 \; ; \qquad 2\text{H}\text{NO}_2 \longrightarrow \text{H}_2\text{O} + \text{NO} + \text{NO}_2$$

108.(BD)
$$H_3PO_4 \xrightarrow{\Delta} H_4P_2O_7 \xrightarrow{\Delta} HPO_3$$
 (unstable)

109.(BC)
$$SOCl_2 + H_2O \longrightarrow SO_2 + 2HC$$

$$+PCl_5$$

$$POCl_3(B)$$

$$\begin{array}{c|c} SOCl_2 + H_2O \longrightarrow SO_2 + 2HCl \\ & \downarrow & PCl_5 \\ \hline & POCl_3(B) \\ \hline \\ Cl & P \\ \hline & Cl & Hybridization of 'P' atom is sp³, $\mu_D \neq 0$, has plane of symmetry. \\ \end{array}$$

$$\textbf{110.(C)} \hspace{0.5cm} Zn + dil. \hspace{0.1cm} HNO_3 \hspace{0.1cm} \longrightarrow \hspace{0.1cm} Zn(NO_3)_2 + N_2O$$

111.(A) Silica garden is obtained by adding coloured cation in sodium silicate.

112.(B) H_3PO_2 is stronger acid than H_3PO_3 .

Best reducing agent is H_3PO_2 because it has 2 reducing hydrogen atom. 113.(D)

114.(A) Red P
$$\leftarrow$$
 $\stackrel{570 \text{ K}}{\leftarrow}$ White P $\stackrel{470 \text{ K}}{-}$ Black P $\stackrel{(C)}{\rightarrow}$

115.(ACD) OF_4 and NCl_5 do not exist due to absence of d-orbital.