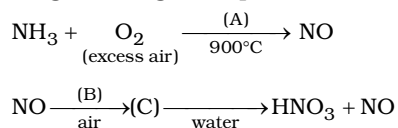



Date Planned : __ / __ / __	Daily Tutorial Sheet-9	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-2	Exact Duration : _____

Paragraph for Q. 106 – 107


The following flow diagram represents the industrial preparation of nitric acid from ammonia:




Answer the questions given below :

- 106.** Which line of entry describes the undefined reagents products and reaction conditions ? 

	A	B	C		A	B	C
(A)	Pt	cool (-25°C)	NO_2	(B)	Ni	cool (-25°C)	N_2O
(C)	Fe	cool (-11°C)	NO_2	(D)	Pd	High pressure	N_2O_3

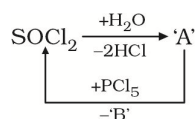
- 107.** During formation of HNO_3 ; dissolution of (C) in water takes place through various reactions. Select the reaction observed in this step. 

(A)	$2\text{NO}_2 + \text{H}_2\text{O} \longrightarrow \text{HNO}_3 + \text{HNO}_2$	(B)	$2\text{HNO}_2 \longrightarrow \text{H}_2\text{O} + \text{NO} + \text{NO}_2$
(C)	Both of these	(D)	None of these

- 108.** Which of the following statement regarding H_3PO_4 is incorrect ? 


- (A) Its K_a value is less than H_3PO_2
 (B) On heating it gives PH_3 and H_3PO_4
 (C) It can be prepared by hydrolysis of both PCl_3 and P_4O_6
 (D) It is formed during reaction of white phosphorous with alkali

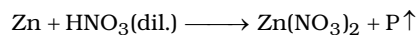
- *109.** Consider the following sequence of reaction 





Then according to given information the correct statement(s) is/are :

- (A) Compound 'A' has $p\pi - p\pi$ bond
 (B) Central atom of compound B is sp^3 - hybridized
 (C) Compound 'B' has plane of symmetry
 (D) Compound 'A' is polar and B is non-polar

- 110.** Consider the following reaction and select INCORRECT statement about gas (P) : 



- (A) Gives neutral solution in water
 (B) Contains more O_2 than Air
 (C) Forms Brown ring with FeSO_4 solution
 (D) None of these

- 111.** One can obtain a silica garden if :
- (A) Crystals of coloured cations are added to a strong solution of sodium silicate
(B) Sodium silicate solution is treated with a base
(C) SiF_4 is hydrolysed
(D) Silicon salts are grown in a garden
- 112.** Select correct statement for phosphorus :
- (A) Thermal stability of allotropic forms : White > Red
(B) Acidic nature : $\text{H}_3\text{PO}_2 > \text{H}_3\text{PO}_3$
(C) Solubility in $\text{CS}_2(l)$: Red-P > White-P
(D) Reactivity with $\text{NaOH}(\text{conc.})$: Red-P > White-P
- 113.** The strongest reducing agent amongst the following is :
- (A) $\text{P}_2\text{O}_7^{4-}$ (B) $\text{P}_2\text{O}_6^{4-}$ (C) H_3PO_4 (D) H_2PO_2^-
- 114.** Three allotropes (A), (B) and (C) of phosphorus in the following change are respectively : 
- $$\text{C} \xleftarrow[\text{CO}_2 \text{ atmosphere}]{570 \text{ K}} \text{A} \xrightarrow[1200 \text{ atm}]{470 \text{ K}} \text{B}$$
- (A) White, black, red (B) Black, white, red
(C) Red, black, white (D) Red, violet, black
- *115.** Which of the following species does/do not exist ? 
- (A) OF_4 (B) NH_2^- (C) NCl_5 (D) ICl_3^+