

- Oxidation state of nitrogen in N_2O , NO and NO_2 is
 a. **1,2,4** b. 2,1,4 c. 4,2,1 d. 2,1,2
- What is the oxidation state of Phosphorus in $H_4P_2O_5$, $H_4P_2O_6$ and $H_4P_2O_7$ respectively?
 a. 5,4,2 b. 5,3,4 c. 5,4,3 d. **3,4,5**
- Oxidation state of sulphur in Caro's acid and Marshall's acid is
 a. **+6,+6** b. +4,+6 c. +6,-6 d. +8,+7
- Oxidation state and hybridisation of central atom of hydrides in Gp-15 is
 a) -2, sp^3
 b) -3, sp^3
 c) +2, sp^3
 d) +1, sp
- What is the hybridised state of Phosphorus in PCl_5 ?
 a. **Sp^3d** b. sp c. sp^3 d. sp^3d^3
- The oxyacid of phosphorus having the lowest oxidation state is
 a. **Hypophosphorous acid** b. ortho phosphoric acid
 c. pyrophosphoric acid d. metaphosphoric acid.
- Which pair of oxyacids of phosphorous contains P-H bonds?
 a. H_3PO_4 , H_3PO_3 b. H_3PO_5 , $H_4P_2O_7$ c. **H_3PO_3 , H_3PO_2** d. H_3PO_2 , HPO_3
- In pyrophosphoric acid, $H_4P_2O_7$ the number of σ and π bonds are
 a. 8 and 2 b. 6 and 2 c. 12 and 0 d. **12 and 2**
- In cyclotrimetaphosphoric acid, the number of single and double bonds are
 a. 3 =, 9 - b. 6 =, 6 - c. **3 =, 12 -** d. 0 =, 12 -
- The number of P-O-P bonds in cyclic meta phosphoric acid is _____
 a. 0 b. 2 c. **3** d. 4
- The sulphate and a metal has the formula $M_2(SO_4)_3$ the formula of its phosphate will be
 a. $M(HPO_4)_2$ b. $M_3(PO_4)_2$ c. $M_2(PO_4)_3$ d. **MPO_4**
- Which of the following oxides of nitrogen is paramagnetic
 a. N_2O b. N_2O_5 c. **NO_2** d. N_2O_3
- Which of these has unpaired electrons?
 a. NO_2^+ and BaO_2 b. KO_2 and AlO_2^- c. **KO_2 only** d. BaO_2 only
- The N_2 molecule is isoelectronic with
 a. CO^- , CN^+ and NO^+ b. **CO , CN^- and NO^+** c. CO^+ , N_2O and O_2^{2-}

d. O_2^+, O_2^- and CO^+

15. Which of the following is an anhydride of nitric acid?

a. **N_2O_5** b. N_2O_4 c. N_2O_3 d. N_2O

16. The reddish brown gas liberated when nitric oxide is oxidised in air is

a. N_2O_5 b. N_2O_4 c. **NO_2** d. N_2O_3

17. Nitric acid oxidises phosphorus to_____.

a. **H_3PO_4** b. H_3PO_3 c. H_3PO_2 d. $H_4P_2O_7$

18. Phosphine can be prepared by the reaction of water with

a. Calcium phosphate b. **calcium phosphide**
c. calcium dihydrogen phosphate d. calcium phosphate

19. $P_4 + 3NaOH + 3H_2O \rightarrow PH_3 + 3NaH_2PO_2$

$Cl_2 + 2NaOH \rightarrow NaCl + NaClO + H_2O$

The above reactions are examples of

a. Neutralisation b. dehydration c. decarboxylation
d. **disproportionate reaction.**

20. The gas liberated when formic acid undergoes dehydration is

a. **CO** b. CO_2 c. SO_2 d. SO_3

21. Nitrolim is a mixture of

a. **$CaCN_2 + \text{graphite}$** b. $CaCN_2 + N_2$ c. $CaC_2 + \text{graphite}$

d. $\text{Ca}(\text{CN})_2$ + graphite

22. CO_2 is _____

a. **an acidic oxide** b. a basic oxide c. a neutral oxide

d. amphoteric oxide

23. $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ on heating liberates a gas which is also obtained by heating

a. $\text{Ba}(\text{N}_3)_2$ b. NH_4NO_2 c. NH_4NO_3 d. **both a and b**