



NSEC 11th 2026

PHYSICAL CHEMISTRY

DPP-01

Chemical Reactions

- The oxidation number of Oxygen in Na_2O_2 is:
 (A) +1 (B) +2
 (C) -2 (D) -1
- The oxidation number of Phosphorus in $\text{Mg}_2\text{P}_2\text{O}_7$ is:
 (A) +3 (B) +2
 (C) +5 (D) -3
- The oxidation states of Sulphur in the anions SO_3^{2-} , $\text{S}_2\text{O}_4^{2-}$ and $\text{S}_2\text{O}_6^{2-}$ follow the order:
 (A) $\text{S}_2\text{O}_6^{2-} < \text{S}_2\text{O}_4^{2-} < \text{SO}_3^{2-}$
 (B) $\text{S}_2\text{O}_4^{2-} < \text{SO}_3^{2-} < \text{S}_2\text{O}_6^{2-}$
 (C) $\text{SO}_3^{2-} < \text{S}_2\text{O}_4^{2-} < \text{S}_2\text{O}_6^{2-}$
 (D) $\text{S}_2\text{O}_4^{2-} < \text{S}_2\text{O}_6^{2-} < \text{SO}_3^{2-}$
- Match List-I (Compounds) with List-II (Oxidation states of Nitrogen) and select answer using the codes given below the lists:

List-I		List-II	
(I)	NaN_3	(p)	+5
(II)	N_2H_2	(q)	+2
(III)	NO	(r)	-1/3
(IV)	N_2O_5	(s)	-1

 (A) I-(r); II-(s); III-(q); IV-(p)
 (B) I-(s); II-(r); III-(q); IV-(p)
 (C) I-(r); II-(s); III-(p); IV-(q)
 (D) I-(s); II-(r); III-(p); IV-(q)
- The average oxidation state of Fe in Fe_3O_4 is:
 (A) -8/3 (B) 8/3
 (C) 2 (D) 3
- The oxidation states of nitrogen in NO , NO_2 , N_2O and NO_3^- are in the order of:
 (A) $\text{NO}_3^- > \text{NO}_2 > \text{NO} > \text{N}_2\text{O}$
 (B) $\text{NO}_2 > \text{NO}_3^- > \text{NO} > \text{N}_2\text{O}$
 (C) $\text{N}_2\text{O} > \text{NO}_2 > \text{NO} > \text{NO}_3^-$
 (D) $\text{NO} > \text{NO}_2 > \text{N}_2\text{O} > \text{NO}_3^-$
- Oxidation number of potassium in K_2O , K_2O_2 and KO_2 respectively, is:
 (A) +2, +1 and +1/2 (B) +1, +1 and +1
 (C) +1, +4 and +2 (D) +1, +2 and +4
- The oxidation number of sulphur in S_8 , S_2F_2 and H_2S respectively are:
 (A) 0, +1 and -2 (B) +2, +1 and -2
 (C) 0, +1 and +2 (D) -2, +1 and -2
- The oxidation state of osmium (Os) in OsO_4 is
 (A) +7 (B) +6
 (C) +4 (D) +8
- Oxidation number of nitrogen in $(\text{NH}_4)_2\text{SO}_4$ is
 (A) $-\frac{1}{3}$ (B) -1
 (C) +1 (D) -3



Answer Key

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|----|-----|-----|-----|
| 1. | (D) | 6. | (A) |
| 2. | (C) | 7. | (B) |
| 3. | (B) | 8. | (A) |
| 4. | (A) | 9. | (D) |
| 5. | (B) | 10. | (D) |

