# Yakeen NEET 2.0 2026

## Physical Chemistry By Amit Mahajan Sir

DPP: 3

## Redox Reaction

**Q1** Identify the **correct** statements with reference to the given reaction

$P_4 + 3\,OH^- + 3H_2O \rightarrow PH_3 + 3H_2\,PO_2^-$

(A) Phosphorus is undergoing reduction only.
(B) Phosphorus is undergoing oxidation only.
(C) Phosphorus is undergoing oxidation as well as reduction.
(D) Phosphorus is undergoing neither oxidation nor reduction.

**Q2** In the reaction,

$$2Na_2S_2O_3 + I_2 \rightarrow Na_2S_4O_6 + 2NaI,$$

the oxidation state of sulphur is:

(A) decreased (B) increased
(C) unchanged (D) None of these

**Q3** What is the change in oxidation number of carbon in the following reaction?

$$CH_4(g) + 4Cl_2(g) \rightarrow CCl_4(l) + 4HCl(g)$$

(A) 0 to +4 (B) -4 to +4
(C) 0 to -4 (D) +4 to +4

**Q4** The oxidation state of $Ni$ in $Ni_{0.98}O_{1.00}$ is:

(A) $-\frac{49}{100}$
(B) $+\frac{100}{49}$
(C) $-\frac{100}{49}$
(D) $+\frac{49}{100}$

**Q5** Equivalent weight of $N_2$ in the change $N_2 \rightarrow NH_3$ is

(A) $\frac{28}{6}$
(B) 28
(C) $\frac{28}{2}$
(D) $\frac{28}{3}$

**Q6** $Cl_2 \xrightarrow{NaOH} NaCl + NaClO_3 + H_2O$

The equivalent mass of $Cl_2$ in the above reaction is

(A) $M$
(B) $M/3$
(C) $M/2$
(D) $3M/5$

**Q7** The equivalent weight of $FeS_2$ in the following reaction is $FeS_2 + O_2 \rightarrow Fe^{3+} + SO_2$

(A) $\frac{\text{Mol.wt}}{1}$
(B) $\frac{\text{Mol.wt}}{7}$
(C) $\frac{\text{Mol.wt}}{11}$
(D) $\frac{\text{Mol.wt}}{9}$

**Q8** Equivalent weight of $FeC_2O_4$ in the change $FeC_2O_4 \rightarrow Fe^{3+} + CO_2$ is

(A) $M/3$
(B) $M/6$
(C) $M/2$
(D) $M/1$

**Q9** In the following change, $3Fe + 4H_2O \longrightarrow Fe_3O_4 + 4H_2$. If the atomic weight of iron is 56 , then its equivalent weight will be

(A) 42 (B) 21
(C) 63 (D) 84

**Q10** When $HNO_3$ is converted into $NH_3$, the equivalent weight of $HNO_3$ will be

(A) $\mathrm{M}/2$
(B) $\mathrm{M}/1$
(C) $\mathrm{M}/6$
(D) $\mathrm{M}/8$

**Q11** The equivalent weight of phosphoric acid $(\mathrm{H_3PO_4})$ in the reaction

$$\mathrm{NaOH + H_3PO_4 \rightarrow NaH_2PO_4 + H_2O}$$

(A) 59 (B) 49
(C) 25 (D) 98

**Q12** Choose the set of coefficients that **correctly** balances the following equation.

$$\mathrm{xCr_2\,O_7^{2-} + yH^+ + ze^- \rightarrow aCr^{3+} + bH_2\,O}$$

(A) $\mathrm{x = 2,\ y = 14,\ z = 6,\ a = 2,\ b = 7}$
(B) $\mathrm{x = 1,\ y = 14,\ z = 6,\ a = 2,\ b = 7}$
(C) $\mathrm{x = 2,\ y = 7,\ z = 6,\ a = 2,\ b = 7}$
(D) $\mathrm{x = 2,\ y = 7,\ z = 6,\ a = 1,\ b = 7}$

**Q13** Consider the following reaction,

$$xMnO_4^- + yC_2O_4^{2-} + zH^+ \rightarrow xMn^{2+} + 2yCO_2 + \frac{z}{2}H_2O$$

The value of x, y and z in the above reaction are respectively:

(A) 5, 2 and 6 (B) 2, 5 and 8
(C) 2, 5 and 16 (D) 5,2 and 8

**Q14** For the redox reaction:

$$\mathrm{Zn + NO_3^- \rightarrow Zn^{2+} + NH_4^+}$$

In basic medium, coefficient of $\mathrm{Zn}$, $\mathrm{NO_3^-}$ and $\mathrm{OH^-}$ in the balanced equation respectively are;

(A) 4, 1, 7 (B) 7, 4, 1
(C) 4, 1, 10 (D) 1, 4, 10

**Q15** In the balanced chemical reaction,

$$\mathrm{IO_3^- + aI^- + bH^+ \rightarrow cH_2O + dI_2}$$

a, b, c and d respectively correspond to

(A) $5, 6, 3, 3$ (B) $5, 3, 6, 3$
(C) $3, 5, 3, 6$ (D) $5, 6, 5, 5$

# Answer Key

| | |
|---|---|
| Q1 | (C) |
| Q2 | (B) |
| Q3 | (B) |
| Q4 | (B) |
| Q5 | (A) |
| Q6 | (D) |
| Q7 | (C) |
| Q8 | (A) |
| Q9 | (B) |
| Q10 | (D) |
| Q11 | (D) |
| Q12 | (B) |
| Q13 | (C) |
| Q14 | (C) |
| Q15 | (A) |