DPP-3 [EQUIVALENT WEIGHT]

Chapter: Redox Reactions

"Jab tera dimaag bole 'baad mein karenge' — ussi waqt likhna shuru kar."

GROUP–A : BASIC n–FACTOR / DIRECT EQUIVALENT WEIGHT

Q1. **Equivalent weight of N_2 in the change $N_2 \rightarrow NH_3$ is**

(1) 28/6
(2) 28
(3) 28/2
(4) 28/3

Q2. **Equivalent weight of NH_3 in the change $N_2 \rightarrow NH_3$ is :**

(1) 17/6
(2) 17
(3) 17/2
(4) 17/3

Q3. **In the reaction $A^{-n_2} + x\ e^- \rightarrow A^{-n_1}$, here x will be**

(1) $n_1 + n_2$
(2) $n_2 - n_1$
(3) $n_1 - n_2$
(4) n_1, n_2

Q4. **Given that the oxidation state of sulphur is –2, the eq. wt. of sulphur is**

(1) 16
(2) 32
(3) 9
(4) 4

Q5. **Equivalent weight of H_2SO_4 in the reaction $H_2SO_4 \rightarrow H_2S$**

(1) M/2
(2) M/3
(3) M/4
(4) M/8

Q6. **What will be n–factor for $Ba(MnO_4)_2$ in acidic medium?**

(1) 5
(2) 10
(3) 6
(4) 4

Q7. **Oxidising product of substance Na_3AsO_3 would be**

(1) $As_2O_3^{3-}$
(2) AsO_3^{3-}
(3) $As_2O_4^{2-}$
(4) AsO_4^{3-}

GROUP–B : EQUIVALENT WEIGHT FROM REDOX REACTIONS

Q8. **In the reaction, $2S_2O_3^{2-} + I_2 \rightarrow S_4O_6^{2-} + 2I^-$, the eq. wt. of $Na_2S_2O_3$ is equal to its :**

(1) Mol. wt.
(2) Mol. wt./2
(3) 2 × Mol. wt.
(4) Mol. wt./6

Q9. **The eq. wt. of iodine in $I_2 + 2S_2O_3^{2-} \rightarrow 2I^- + S_4O_6^{2-}$ is :**

(1) Its Mol. wt.
(2) Mol. wt./2
(3) Mol. wt./4
(4) None of these

Q10. **Molecular weight of $KBrO_3$ is M. What is its equivalent weight, if reaction is $BrO_3^- \rightarrow Br^-$ (acidic medium):**

(1) M
(2) M/4
(3) M/6
(4) 6M

Q11. **What would be the equivalent weight of the reductant in the reaction : $[Fe(CN)_6]^{3-} + H_2O_2 + 2OH^- \rightarrow 2[Fe(CN)_6]^{4-} + 2H_2O + O_2$**

(1) 17
(2) 212
(3) 34
(4) 32

Q12. **The equivalent weight of $Na_2S_2O_3$ as reductant in the reaction $Na_2S_2O_3 + H_2O + Cl_2 \rightarrow Na_2SO_4 + 2HCl + S$ is :**

(1) Mol. wt./1
(2) Mol. wt./2
(3) Mol. wt./6
(4) Mol. wt./8

Q13. **Equivalent weight of FeC_2O_4 in the change $FeC_2O_4 \rightarrow Fe^{3+} + CO_2$ is :**

(1) M/3
(2) M/6
(3) M/2
(4) M/1

Q14. **The equivalent weight of $MnSO_4$ is half of its molecular weight when it is converted to :**

(1) Mn_2O_3
(2) MnO_2
(3) MnO_4^-
(4) MnO_4^{2-}

GROUP–C : BALANCED / MULTI–ELECTRON REDOX

Q15. **In the reaction $VO + Fe_2O_3 \rightarrow FeO + V_2O_5$, the eq. wt. of V_2O_5 is equal to its :**

(1) Mol. wt.
(2) Mol. wt./8

(3) Mol. wt./6
(4) Mol. wt./4

Q16. **In the following change, $3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$, If atomic weight of iron is 56, then its equivalent weight will be :**
(1) 42
(2) 21
(3) 63
(4) 84

Q17. **$Cr_2O_7^{2-} + I^- + H^+ \rightarrow Cr^{3+} + I_2 + H_2O$ The equivalent weight of the reductant in the above equation is :-**
(1) 26
(2) 127
(3) 63.5
(4) 10.4

Q18. **What is the equivalent weight of the reactant in the equation: $[Fe(CN)_6]^{4-} \rightarrow Fe_2O_3 + CO_2 + NO_2$**
(1) M/42
(2) M/55
(3) M/45
(4) M/50

GROUP–D : STOICHIOMETRIC REDOX (MOLE RELATION)

Q19. **The number of mole of oxalate ions oxidised by one mole of MnO_4^- is :**
(1) 1/5
(2) 2/5
(3) 5/2
(4) 5

Q20. **How many moles of $KMnO_4$ are reduced by 1 mole of ferrous oxalate in acidic medium :-**
(1) 1/5
(2) 5/3
(3) 1/3
(4) 3/5

Q21. **The number of moles of $KMnO_4$ reduced by one mole of KI in alkaline medium is :-**
(1) One
(2) Two
(3) Five
(4) One fifth

Q22. **How much amount of $CuSO_4 \cdot 5H_2O$ required for liberation of 2.54 g I_2 when titrated with KI :-**
(1) 2.5 g
(2) 4.99 g
(3) 2.4 g
(4) 1.2 g

Q23. **In a reaction 4 mole of electrons are transferred to one mole of HNO_3 when it acts**

as an oxidant. The possible reduction product is :

(1) (1/2) mole N_2

(2) (1/2) mole N_2O

(3) 1 mole of NO_2

(4) 1 mole NH_3