NEET : CHAPTER WISE TEST-8

SUBJECT :- CHEMISTRY **DATE.....**

CLASS :- 11th **NAME.....**

CHAPTER :- REDOX **SECTION.....**

(SECTION-A)

1. Fluorine does not show positive oxidation state due to the -
(A) Absence of s-orbitals
(B) Absence of p-orbitals
(C) Absence of d-orbitals
(D) Highest electronegativity

2. The reaction, $2K_2MnO_4 + Cl_2 \rightarrow 2KMnO_4 + 2KCl$ is an example of -
(A) Oxidation (B) Reduction
(C) Redox (D) Chlorination

3. In the reaction, $3Br_2 + 6CO_3^{2-} + 3H_2O \rightarrow 5Br^- + BrO_3^- + 6HCO_3^-$
(A) Bromine is oxidised and carbonate is reduced
(B) Bromine is oxidised as well as reduced
(C) Bromine is reduced and water is oxidised
(D) Br_2 is neither oxidised nor reduced

4. When SO_2 is passed through acidified $K_2Cr_2O_7$ solution, $Cr_2(SO_4)_3$ is formed. The change in oxidation state of Cr is –
(A) + 4 to + 2 (B) + 5 to + 3
(C) + 6 to + 3 (D) + 7 to + 1

5. Which one of the following is not a redox reaction?
(A) $CaCO_3 \longrightarrow CaO + CO_2$
(B) $2H_2 + O_2 \longrightarrow 2H_2O$
(C) $Na + H_2O \longrightarrow NaOH + \frac{1}{2}H_2$
(D) $MnCl_3 \longrightarrow MnCl_2 + \frac{1}{2}Cl_2$

6. The charge on cobalt in $[Co(CN)_6]^{3-}$ is -
(A) – 6 (B) – 3
(C) + 3 (D) + 6

7. In which of the following reactions, the underlined element has decreased its oxidation number during the reaction ?
(A) $Fe + CuSO_4 \rightarrow Cu + FeSO_4$
(B) $H_2 + Cl_2 \rightarrow 2HCl$
(C) $C + H_2O \rightarrow CO + H_2$
(D) $MnO_2 + 4HCl \rightarrow MnCl_2 + Cl_2 + 2H_2O$

8. When potassium permanganate is added to acidulated solution of ferrous sulphate-
(A) Potassium ion is reduced
(B) Manganese ion is oxidised
(C) Ferrous ion is oxidised
(D) Acid is neutralised

9. $H_2O_2 + H_2O_2 \longrightarrow 2H_2O + O_2$ is an example of disproportionation because-
(A) Oxidation number of oxygen only decreases
(B) Oxidation number of oxygen only increases
(C) Oxidation number of oxygen decreases as well as increases
(D) Oxidation number of oxygen neither decreases nor increases

10. In the following reaction $4P + 3KOH + 3H_2O \longrightarrow 3KH_2PO_2 + PH_3$
(A) Only phosphorus is oxidised
(B) Only phosphorus is reduced
(C) Phosphorus is both oxidised and reduced
(D) Phosphorus is neither oxidised nor reduced

11. O.N. of hydrogen in KH, MgH_2 and NaH respectively would be-
(A) –1, – 1 and –1 (B) +1, + 1, and + 1
(C) +2, +1 and –2 (D) –2, –3 and –1

12. Which one can act as both oxidising & reducing agent ?
(A) HNO_2 (B) H_2O_2
(C) H_2SO_3 (D) all

13. Which compound cannot be used as reducing agent ?
(A) CO_2 (B) HNO_2
(C) H_3PO_3 (D) H_2SO_3

14. What will be the value of x, y and z in the following equation ?
$H_2C_2O_4 + xH_2O_2 \rightarrow yCO_2 + zH_2O$
(A) 2, 1, 2 (B) 1, 2, 2
(C) 2, 2, 1 (D) None

15. Oxidation number of nitrogen can be-
(A) From + 5 to – 3
(B) From – 5 to – 3
(C) From – 5 to + 3
(D) From + 10 to + 6

16. Oxidation number of Mn can be-
(A) +2 to +6 (B) +2, +3
(C) +2 to +7 (D) +2, +8

17. Maximum & minimum oxidation number of elements are given, which one is incorrect match?

	Elements	Min O.N.	Max O.N.
(A)	P	– 3	+ 5
(B)	Cr	+ 2	+ 6
(C)	Cl	– 1	+ 7
(D)	C	– 4	+ 4

18. When $KMnO_4$ is titrated against $FeSO_4.(NH_4)2\ SO_4.6H_2O$ in acidic medium the equivalent mass of $KMnO_4$ is –
(A) Molecular mass / 10
(B) Molecular mass / 5
(C) Molecular mass / 2
(D) Molecular mass

19. In acidic medium, equivalent weight of $K_2Cr_2O_7$ (Molecular weight = M) is-
(A) M/3 (B) M/4
(C) M/6 (D) M/2

20. The equivalent weight of $Na_2S_2O_3$ (Molecular weight = M) in the reaction, $2Na_2S_2O_3 + I_2 \rightarrow Na_2S_4O_6 + 2NaI$ is –
(A) M/4 (B) M/3 (C) M/2 (D) M

21. What is the equivalent weight of $C_{12}H_{22}O_{11}$ in the following reaction ?
$C_{12}H_{22}O_{11} + 36HNO_3 \rightarrow 6H_2C_2O_4 + 36NO_2 + 23H_2O$
(A) $\frac{342}{36}$ (B) $\frac{342}{12}$
(C) $\frac{342}{22}$ (D) $\frac{342}{3}$

22. What is the equivalent weight of P4 in the following reaction ?
$P_4 + NaOH \longrightarrow NaH_2PO_2 + PH_3$
(A) $\frac{31}{4}$ (B) $\frac{31}{3}$
(C) $\frac{31}{2}$ (D) $31 \times 4/3$

23. Which of the following reaction represents the oxidising behaviour of H_2SO_4?
(A) $2PCl_5 + H_2SO_4 \rightarrow 2POCl_3 + 2HCl + SO_2Cl_2$
(B) $2NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$
(C) $NaCl + H_2SO_4 \rightarrow NaHSO_4 + HCl$
(D) $2HI + H_2SO_4 \rightarrow I_2 + SO_2 + 2H_2O$

24. Which one of the following is not a redox reaction ?
(A) $CaCO_3 \rightarrow CaO + CO_2$
(B) $2H_2 + O_2 \rightarrow 2H_2O$
(C) $Na + H_2O \rightarrow NaOH + \frac{1}{2}H_2$
(D) $MnCl_3 \rightarrow MnCl_2 + \frac{1}{2}Cl_2$

25. Amongst the following, identify the species with an atom in + 6 oxidation state :-
(A) MnO^-_4 (B) $[Cr(CN)_6]^{3-}$
(C) $[NiF_6]^{2-}$ (D) CrO_2Cl_2

26. In the reaction - $MnO^-_4 + SO_3^{2-} + H^+ \rightarrow SO_4^{-2} + Mn^{+2} + H_2O$
(A) MnO^-_4 and H^+ both are reduced
(B) MnO^-_4 is reduced and H^+ is oxidised
(C) MnO^-_4 is reduced and SO_3^{2-} is oxidised
(D) MnO^-_4 is oxidised and SO_3^{2-} is reduced

27. In which of the following compounds iron has lowest oxidation state :-
(A) $FeSO_4.(NH_4)2SO_4.6H_2O$
(B) $K_4[Fe(CN)_6]$
(C) $Fe(CO)_5$
(D) $Fe_{0.94}O$

28. The equivalent weight of $MnSO_4$ is half of its molecular weight when it is converted to :-
(A) Mn_2O_3 (B) MnO_2
(C) MnO_4^- (D) MnO_4^{-2}

29. In the balanced equation-
$[Zn + H^+ + NO_3^- \rightarrow NH_4^+ + Zn^{+2} + H_2O]$ coefficient of NH_4^+ is :-
(A) 4 (B) 3 (C) 2 (D) 1

30. HNO_2 acts as an oxidant with which one of the following reagent ?
(A) $KMnO_4$ (B) H_2S
(C) $K_2Cr_2O_7$ (D) Br_2

31. Match List - I (compound) with list - II (Oxidation state of N) and select the correct answer using the codes given below the list :-

List - I	**List-II**
(A) KNO3	(a)– 1/3
(B) HNO2	(b) – 3
(C) NH4Cl	(c) 0
(D) NaN3	(d) + 3
	(e) + 5

Codes are :-

	A	B	C	D
(A)	e	d	b	a
(B)	e	b	d	a
(C)	d	e	a	c
(D)	b	c	d	e

32. In the balanced equation $MnO_4^- + H^+ + C_2O_4^{2-} \rightarrow Mn^{2+} + CO_2 + H_2O$, the moles of CO_2 formed are :-
(A) 2 (B) 4 (C) 5 (D) 10

33. In the conversion of Br_2 to BrO_3^- the oxidation state of bromine changes from :-
(A) 0 to 5 (B) 1 to 5
(C) 0 to –3 (D) 2 to 5

34. Assuming complete ionization, same moles of which of the following compounds will require the least amount of acidified $KMnO_4$ for complete oxidation ?
(A) FeC_2O_4 (B) $Fe(NO_2)_2$
(C) $FeSO_4$ (D) $Fe(SO_4)_2$

35. Oxidation state of cobalt in $[Co(NH_3)_4(H_2O)Cl]SO_4$ is :
(A) 0 (B) +4 (C) –2 (D) +3

(SECTION-B)

36. Oxidation number of 'N' in N_3H (hydrazoic acid) is :-
(A) $-\frac{1}{3}$ (B) –3
(C) +3 (D) $+\frac{2}{3}$

37. Which one is the oxidising agent in the reaction given below ?
$2CrO_4^{2-} + 2H^+ \rightarrow Cr_2O_7^{-2} + H_2O$
(A) H^+ (B) $Cr_2O_7^{-2}$
(C) Cr^{2+} (D) None

38. In substance $Mg(HXO_3)$, the oxidation number of X is :-
(A) 0 (B) +2 (C) +3 (D) +4

39. Correct order of oxidising strength is :
(A) $MnO_4^-, VO_2^+, Cr_2O_7^{2-}$
(B) $Cr_2O_7^{2-}, MnO_4^-, VO_2^+$
(C) $Cr_2O_7^{2-}, VO_2^+, MnO_4^-$
(D) $MnO_4^-, Cr_2O_7^{2-}, VO_2^+$

40. Which statement is wrong?
(A) Oxidation number of oxygen is +1 in peroxides
(B) Oxidation number of oxygen is +2 in oxygen difluoride
(C) Oxidation number of oxygen is $-\frac{1}{2}$ in superoxides
(D) Oxidation number of oxygen is –2 in most of its compound

41. Which of the following reaction involves neither oxidation nor reduction ?
(A) $CrO_4^{2-} \rightarrow Cr_2O_7^{2-}$
(B) $Cr \rightarrow CrCl_3$
(C) $Na \rightarrow Na^+$
(D) $2S_2O_3^{2-} \rightarrow S_4O_6^{2-}$

42. The oxidation number of phosphorus in PH_4^+, PO_2^{3-}, PO_4^{3-} and PO_3^{3-} are respectively :–
(A) –3, +1, +3, +5 (B) –3, +3, +5, +1
(C) +3, –3, +5, +1 (D) –3, +1, +5, +3

43. The number of electrons required to balance the following equation are :
$NO_3^- + 4H^+ \rightarrow 2H_2O + NO$
(A) 2 on right side (B) 3 on left side
(C) 3 on right side (D) 5 on left side

44. In which of the following compounds, nitrogen exhibits highest oxidation state ?
(A) N_3H (B) NH_2OH
(C) N_2H_4 (D) NH_3

45. In the reaction $8Al + 3Fe_3O_4 \rightarrow 4\ Al_2O_3 + 9Fe$, the number of electrons transferred from reductant to oxidant is :-
(A) 8 (B) 4 (C) 16 (D) 24

46. **Assertion :** SO_2 and Cl_2 both are bleaching agents.
Reason : Both are reducing agents.
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.

47. **Assertion :** Fluorine exists only in –1 oxidation state.
Reason : Fluorine has $2s^2 2p^5$ configuration.
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.

48. **Assertion :** Stannous chloride is a powerful oxidising agent which oxidises mercuric chloride to mercury.
Reason : Stannous chloride gives grey precipitate with mercuric chloride, but stannic chloride does not do so.
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.

49. **Assertion :** $HClO_4$ is a stronger acid than $HClO_3$.
Reason : Oxidation state of Cl in $HClO_4$ is +VII and in $HClO_3$ +V.
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.

50. **Assertion :** In a reaction $Zn(s) + CuSO_4(aq) \rightarrow ZnSO_4(aq) + Cu(s)$, Zn is a reductant but itself get oxidized.
Reason : In a redox reaction, oxidant is reduced by accepting electrons and reductant is oxidized by losing electrons.
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.