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Time : 5 Hour | STD 11 Science chemistry | Total Marks : 600

kd700+ neet target ch-7 redox reactions

*** Chemistry** **[600]**

1. On balancing the given redox reaction,

   $aCr_2O_7^{2-} + bSO_3^{2-}(aq) + cH^+(aq) \rightarrow 2aCr^{3+}(aq) + bSO_4^{2-}(aq) + \frac{c}{2}H_2O(l)$

   the coefficients a, b and c are found to be, respectively-

   (A) $8,1,3$ (B) $1,3,8$ (C) $3,8,1$ (D) $1,8,3$

2. The oxidation state of Cr in Cr_2O_6 is

   (A) -6 (B) $+12$ (C) $+6$ (D) $+4$

3. For the redox reaction

   $MnO_4^- + C_2O_4^{2-} + H^+ \longrightarrow Mn^{2+} + CO_2 + H_2O$

   the correct coefficients of the reactants for the balanced equation are

MnO_4^-	$C_2O_4^{2-}$	H^+
(A) 16	5	2
(B) 2	5	16
(C) 2	16	5
(D) 5	16	2

4. In acidic medium, H_2O_2 changes $Cr_2O_7^{2-}$ to CrO_5 which has two $(-O-O-)$ bonds. Oxidation state of Cr in CrO_5 is

   (A) $+5$ (B) $+3$ (C) $+6$ (D) -10

5. Max. number of moles of electrons taken up by one mole of NO_3^- when it is reduced to

   (A) NH_3 (B) NH_2OH (C) NO (D) NO_2

6. When Sn^{2+} changes to Sn^{4+} in a reaction

   (A) It loses two electrons (B) It gains two electrons

   (C) It loses two protons (D) It gains two protons

7. In the following reaction, $4P + 3KOH + 3H_2O \rightarrow 3KH_2PO_2 + PH_3$

   (A) P is oxidized as well as reduced

   (B) P is reduced only

   (C) P is oxidised only

   (D) None of these

8. The conversion of sugar $C_{12}H_{22}O_{11} \rightarrow CO_2$ is

   (A) Oxidation

   (B) Reduction

(C) Neither oxidation nor reduction

(D) Both oxidation and reduction

9. The oxidation number of Ba in barium peroxide is

(A) $+6$ (B) $+2$ (C) $+1$ (D) 4

10. Chlorine is in $+1$ oxidation state in

(A) HCl (B) $HClO_4$ (C) ICl (D) Cl_2O

11. When $K_2Cr_2O_7$ is converted to K_2CrO_4, the change in the oxidation state of chromium is

(A) 0 (B) 6 (C) 4 (D) 3

12. Oxidation number of N in $(NH_4)_2SO_4$ is

(A) $-1/3$ (B) -1 (C) $+1$ (D) -3

13. Oxidation state of chlorine in perchloric acid is

(A) -1 (B) 0 (C) -7 (D) $+7$

14. Oxidation number of oxygen in O_2 molecule is

(A) $+1$ (B) 0 (C) $+2$ (D) -2

15. Carbon is in the lowest oxidation state in

(A) CH_4 (B) CCl_4 (C) CF_4 (D) CO_2

16. The oxidation states of phosphorus vary from

(A) -3 to $+5$ (B) -1 to $+1$ (C) -3 to $+3$ (D) -5 to $+1$

17. The oxidation number of S in $H_2S_2O_8$ is

(A) $+2$ (B) $+4$ (C) $+6$ (D) $+7$

18. The oxidation state of nitrogen in N_3H is

(A) $+\frac{1}{3}$ (B) $+3$ (C) -1 (D) $-\frac{1}{3}$

19. Sulphur has highest oxidation state in

(A) SO_2 (B) H_2SO_4 (C) $Na_2S_2O_3$ (D) $Na_2S_4O_6$

20. The oxidation number of Fe and S in iron pyrites are

(A) $4, -2$ (B) $2, -1$ (C) $3, -1.5$ (D) $3, -1$

21. Which one of the following has the highest oxidation number of iodine

(A) KI_3 (B) KI (C) IF_5 (D) KIO_4

22. The oxidation number of N in $N_2H_5^+$

(A) -3 (B) -2 (C) -1 (D) $+2$

23. In which of the following compounds the oxidation number of carbon is maximum

(A) $HCHO$ (B) $CHCl_3$ (C) CH_3OH (D) $C_{12}H_{22}O_{11}$

24. If HNO_3 changes into N_2O, the oxidation number is changed by

(A) $+2$ (B) -1 (C) 0 (D) $+4$

25. In which one of the following changes there are transfer of five electrons

(A) $MnO_4^- \rightarrow Mn^{2+}$

(B) $CrO_4^2 \rightarrow Cr^{3+}$

(C) $MnO_4^{2-} \rightarrow MnO_2$

(D) $Cr_2O_7^{2-} \rightarrow 2Cr^{3+}$

26. The oxidation number of hydrogen in $MH_2$is

(A) $+1$ (B) -1 (C) $+2$ (D) -2

27. The highest oxidation state of Mn is shown by

(A) K_2MnO_4 (B) $KMnO_4$ (C) MnO_2 (D) Mn_2O_2

28. The atomic number of an element which shows the oxidation state of $+3$ is

(A) 13 (B) 32 (C) 33 (D) 17

29. Oxidation state of oxygen in F_2O is

(A) $+1$ (B) $+2$ (C) -1 (D) -2

30. The oxidation state of nitrogen is highest in

(A) N_3H (B) NH_2OH (C) N_2H_4 (D) NH_3

31. Sulphur has lowest oxidation number in

(A) H_2SO_3 (B) SO_2 (C) H_2SO_4 (D) H_2S

32. The oxidation number and covalency of sulphur in the sulphur molecule (S_8) are respectively

(A) 0 and 2 (B) 6 and 8 (C) 0 and 8 (D) 6 and 2

33. In ferrous ammonium sulphate oxidation number of Fe is

(A) $+3$ (B) $+2$ (C) $+1$ (D) -2

34. A compound is in its low oxidation state. Then its will be

(A) Highly acidic

(B) Highly basic

(C) Highest oxidising property

(D) Half acidic, half basic

35. The oxidation number of Mn in $KMnO_4$ is

(A) $+7$ (B) -7 (C) $+1$ (D) -1

36. Oxygen has oxidation states of $+2$ in the

(A) H_2O_2 (B) CO_2 (C) H_2O (D) OF_2

37. Carbon has zero oxidation number in

(A) CO (B) CH_4 (C) CH_2Cl_2 (D) CH_3Cl

38. Nitrogen show different oxidation states in the range

(A) 0 to $+5$ (B) -3 to $+5$ (C) -5 to $+3$ (D) -3 to $+3$

39. Oxidation number of Mn in K_2MnO_4 and $MnSO_4$ are respectively

(A) $+7,+2$ (B) $+6,+2$ (C) $+5,+2$ (D) $+2,+6$

40. Oxidation number of N in NH_3 is

(A) -3 (B) $+3$ (C) 0 (D) $+5$

41. The oxidation number of sulphur in H_2S is

(A) -2 (B) $+3$ (C) $+2$ (D) -3

42. The oxidation state of I in IPO_4 is

(A) $+1$ (B) $+3$ (C) $+5$ (D) $+7$

43. In the equation $H_2S+2HNO_3 \rightarrow 2H_2O+2NO_2+S$. The equivalent weight of hydrogen sulphide is

(A) 16 (B) 68 (C) 34 (D) 17

44. If $1.2\,g$ of metal displace $1.12\,litre$ hydrogen at normal temperature and pressure ,equivalent weight of metal would be

(A) 12 (B) 24 (C) $1.2 \div 11.2$ (D) 1.2×11.2

45. In which of the following reactions there is no change in valency

(A) $4KClO_3 \rightarrow 3KClO_4+KCl$

(B) Cl_2

(C) $BaO_2+H_2SO_4 \rightarrow BaSO_4+H_2O_2$

(D) $2BaO+O_2 \rightarrow 2BaO_2$

46. What is the equivalent mass of IO_4^- when it is converted into I_2 in acid medium

(A) $M/6$ (B) $M/7$ (C) $M/5$ (D) $M/4$

47. In the reaction $I_2+2S_2O_3^{--} \rightarrow 2I^- + S_4O_6^{--}$ equivalent weight of iodine will be equal to

(A) $1/2$ of molecular weight (B) Molecular weight

(C) $1/4$ of molecular weight (D) None

48. The equivalent weight of KIO_3 in the reaction $2Cr(OH)_3+4OH+KIO_3 \rightarrow 2\,CrO_4^{2-}+5H_2O+KI$ is

(A) $Mole\,wt.$

(B) $\frac{\text{Mol.wt.}}{6}$

(C) $\frac{\text{Mol.wt.}}{2}$

(D) $\frac{\text{Mol.wt.}}{3}$

49. Match List I with List II and select the correct answer using the codes given below the lists

List I (Compound)	List II (Oxidation state of N)
(A) NO_2	(1) $+5$
(B) HNO	(2) -3
(C) NH_3	(3) $+4$
(D) N_2O_5	(4) $+1$

code : $A\ B\ C\ D$

(A) 2 3 4 1 (B) 3 1 2 4 (C) 3 4 2 1 (D) 2 3 1 4

50. M^{+3} ion loses $3e^-$. Its oxidation number will be

(A) 0 (B) $+3$ (C) $+6$ (D) -3

51. Oxidation number of oxygen in potassium super oxide (KO_2) is

(A) -2 (B) -1 (C) $-1/2$ (D) $-1/4$

52. Consider the following statements :
In the chemical reaction
$MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$
(1) Manganese ion is oxidised
(2) Manganese ion is reduced
(3) Chloride ion is oxidised
(4) Chloride ion is reduced.
Which of these statements are correct

(A) 1 and 3 (B) 1 and 4 (C) 2 and 3 (D) 2 and 4

53. Oxidation number of S in Na_2SO_4 is

(A) -2 (B) 2 (C) -6 (D) 6

54. In alkaline condition $KMnO_4$ reacts as $2KMnO_4 + 2KOH \rightarrow 2K_2MnO_4 + H_2O + O$. The equivalent weight of $KMnO_4$ would be (Atomic mass of $K = 39$, $Mn = 55$, $O = 16$)

(A) 158 (B) 79 (C) 52.7 (D) 31.6

55. In acidic medium, equivalent weight of $K_2Cr_2O_7$ $(mol.\ wt. = M)$ is

(A) $M/3$ (B) $M/4$ (C) $M/6$ (D) $M/2$

56. In Which of the following process nitrogen undergoes in oxidation process

(A) $N_2 \rightarrow HN_3$ (B) $N_2O_4 \rightarrow 2NO_2$ (C) $NO_3^- \rightarrow N_2O_5$ (D) $N_2O \rightarrow NO$

57. The oxidation number of sulphur in S_8, S_2F_2 and H_2S respectively are

(A) $0, +1, -2$ (B) $+2, +1, -2$ (C) $0, +1, +2$ (D) $-2, +1, -2$

58. In acidic medium, H_2O_2 changes $Cr_2O_7^{-2}$ to CrO_5 which has two $(-O-O)$ bonds. Oxidation state of Cr in CrO_5 is

(A) 5 (B) 3 (C) 6 (D) 10

59. Oxidation numbers of P in PO_4^{3-}, S in SO_4^{2-} and that of Cr in $Cr_2O_7^{2-}$ are respectively

(A) $-3, +6$ and $+6$ (B) $+5, +6$ and $+6$ (C) $+3, +6$ and $+5$ (D) $+5, +3$ and $+6$

60. Oxidation number of C in HNC is

(A) $+2$ (B) -3 (C) $+3$ (D) 0

61. In which pair of species the oxidation number of chlorine is same

(A) $ClO^{-1}, HClO_3$ (B) $ICl, NaCl$ (C) $NaCl, NaClO_3$ (D) ICl, ClF_3

62. The oxidation number of H in KH, MgH_2 and $NaOH$ are respectively

(A) $-1, -1, +1$ (B) $+1, +1, +1$ (C) $+2, +11, -2$ (D) $-2, -3, -1$

63. The correct set of oxidation number of N in NH_4NO_2 is

(A) -3, $+5$ (B) $+5$, -3 (C) -3, -3 (D) -3, $+3$

64. In the reaction

$8Al + 3Fe_3O_4 \rightarrow 4Al_2O_3 + 9Fe$

the number of moles of electrons transfered by $1\,mol$ of reductant

(A) 24 (B) 8 (C) 3 (D) 12

65. $KMnO_4$ oxidises oxallic acid to CO_2 in acidic medium then equivalent weight of $KMnO_4$ is $(Mn = 55)$

(A) 158 (B) 31.6 (C) 39.6 (D) 52.67

66. Oxidation number of N in ammonium nitrate is

(A) $+3$ (B) -3 (C) -3 and $+5$ (D) $+5$

67. The oxidation number of Cr in K_3CrO_8 is $+5$ how many peroxy linkages are present in this molecule

(A) 4 (B) 3 (C) 5 (D) 2

68. Which of the following is not a peroxide

(A) Na_2O_2 (B) CaO_2 (C) PbO_2 (D) H_2O_2

69. Which of the following can act both as an oxidising as well as reducing agent ?

(A) HNO_2 (B) $KMnO_4$ (C) H_2S (D) H_2SO_4

70. Which one of the following does not have an underlined atom with fractional oxidation state

(A) $\underline{Fe_3}O_4$ (B) $\underline{N_3}H$ (C) $K\underline{O_2}$ (D) $Na_2\underline{S_2}O_3$

71. In which of the following reaction element sulphur get reduced

(A) $SO_3^{2-} + Cr_2O_7^{2-} \longrightarrow SO_4^{2-} + Cr^{+3}$

(B) $H_2S + MnO_4^{-} \longrightarrow Mn^{+2} + S$

(C) $H_2SO_4 + I^{-} \longrightarrow I_2 + SO_2$

(D) $H_2SO_4 + 2NaOH \longrightarrow Na_2SO_4 + 2H_2O$

72. What is the equivalent weight of hydrochloric acid in given redox reaction
$MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$
If molar mass of hydrochloric acid is M.
(A) M (B) $M/2$ (C) $3M/4$ (D) $2M$

73. $2\,mole$ of N_2H_4 loses $16\,mole$ of electron is being converted to a new compound X. Assuming that all of the N appears in the new compound. What is the oxidation state of $'N'$ in X ?
(A) -1 (B) -2 (C) $+2$ (D) $+4$

74. The stability order of oxide, peroxide and superoxide of alkaline metals is
(A) Normal oxide $>$ Peroxide $>$ Superoxide
(B) Peroxide $>$ Normal oxide $>$ Superoxide
(C) Superoxide $>$ Normal oxide $>$ Peroxide
(D) None of these

75. Which of the following is not a redox reaction
(A) $2Rb + 2H_2O \rightarrow 2RbOH + H_2$
(B) $2CuI_2 \rightarrow 2CuI + I_2$
(C) $2H_2O_2 \rightarrow 2H_2O + O_2$
(D) $4KCN + Fe(CN)_2 \rightarrow K_4Fe(CN)_6$

76. $P_4 + 3NaOH + 3H_2O \rightarrow 3NaH_2PO_2 + PH_3$ is an example of
(A) Inter molecular Redox reaction
(B) Intra molecular Redox reaction
(C) Disproportionation Redox reaction
(D) None of these

77. Assign A, B, C, D from given type of reaction.
$XeF_4 + H_2O \longrightarrow Xe + XeO_3 + HF + O_2$
(A) for disproportionation reaction.
(B) for comproportionation reaction.
(C) for either intermolecular redox reaction or displacement reaction.
(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

78. Number of moles of $K_2Cr_2O_7$ reduced by one mole of Sn^{2+} ions is
(A) $1/3$ (B) 3 (C) 1.6 (D) 6

79. The number of moles of acidified $KMnO_4$ required to convert one mole of sulphite ion into sulphate ion is

(A) $2/5$ (B) $3/5$ (C) $4/5$ (D) 1

80. Which of the following equations is a balanced one ?

(A) $5BiO_3^- + 22H^+ + Mn^{2+} \rightarrow 5Bi^{3+} + 7H_2O + MnO_4^-$

(B) $5BiO_3^- + 14H^+ + 2Mn^{2+} \rightarrow 5Bi^{3+} + 7H_2O + 2MnO_4^-$

(C) $2BiO_3^- + 4H^+ + Mn^{2+} \rightarrow 2Bi^{3+} + 2H_2O + MnO_4^-$

(D) $6BiO_3^- + 12H^+ + 3Mn^{2+} \rightarrow 6Bi^{3+} + 6H_2O + 3MnO_4^-$

81. What will be the coefficients in the balanced form of following equation

$xIO_3^- + yHSO_3^- \rightarrow zI^- + pH^+ + qSO_4^{-2}$

$x \quad y \quad z$

(A) $1 \quad 3 \quad 3$ (B) $5 \quad 3 \quad 1$ (C) $1 \quad 3 \quad 1$ (D) $1 \quad 2 \quad 1$

82. In the balanced chemical reaction

$IO_3^- + aI^- + bH^+ \rightarrow cH_2O + dI_2$

a, b, c, d respectively corresponds to

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

83. The values of coefficients to balance the following reaction are

$Cr(OH)_3 + ClO^- + OH^- \rightarrow CrO_4^{2-} + Cl^- + H_2O$

$Cr(OH)_3 \quad - \quad ClO^- \quad - \quad CrO_4^{2-} \quad - \quad Cl^-$

(A) $2 \quad - \quad 3 \quad - \quad 3 \quad - \quad 3$

(B) $2 \quad - \quad 4 \quad - \quad 3 \quad - \quad 2$

(C) $2 \quad - \quad 4 \quad - \quad 4 \quad - \quad 2$

(D) $2 \quad - \quad 3 \quad - \quad 2 \quad - \quad 3$

84. For the redox reaction

$xP_4 + yHNO_3 \rightarrow H_3PO_4 + NO_2 + H_2O$

(A) $x = 1, y = 5$ (B) $x = 2, y = 10$ (C) $x = 1, y = 20$ (D) $x = 1, y = 15$

85. In the given half reaction $Cr_2O_7^{2-} + ZH^+ + e^- \rightarrow Cr^{3+} + H_2O$ Find the value of Z ?

(A) 6 (B) 5 (C) 8 (D) 14

86. Which of the following is not intramolecular redox reaction?

(A) $NH_4NO_2 \rightarrow N_2 + 2H_2O$

(B) $2Mn_2O_7 \rightarrow 4MnO_2 + 3O_2$

(C) $2KClO_3 \rightarrow 2KCl + 3O_2$

(D) $2H_2O_2 \rightarrow 2H_2O + O_2$

87. Which of the following reaction is not a redox reaction ?

(A) $SO_2 + H_2S \longrightarrow 2H_2O + S$

(B) $4KClO_3 \longrightarrow 3KClO_4 + KCl$

(C) $Na_2O + H_2SO_4 \longrightarrow Na_2SO_4 + H_2O$

(D) $2Na + O_2 \longrightarrow Na_2O_2$

88. Assign A, B, C, D from given type of reaction. $Fe(s) + H_2O(l) \xrightarrow{Boil} Fe_3O_4 + H_2 \uparrow$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

89. Assign A, B, C, D from given type of reaction. $Zn(s) + 2HCl \longrightarrow ZnCl_2 + H_2$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

90. Assign A, B, C, D from given type of reaction.

$PbO_2 + HCl\ (dil) \xrightarrow{Warm} PbCl_2 \downarrow + Cl_2 \uparrow + H_2O$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

91. Assign A, B, C, D from given type of reaction.

$Cr_2O_7^{2-} + H^+ + SO_3^{2-} \longrightarrow Cr^{3+}(aq.) + SO_4^{2-}$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

92. Assign A, B, C, D from given type of reaction.

A for disproportionation reaction.

B for comproportionation reaction.

C for either intermolecular redox reaction or displacement reaction.

D for either thermal combination redox reaction or thermal decomposition redox reaction.

$MnO_4^- + H^+ + Br^- \longrightarrow Mn^{2+}(aq.) + Br_2 \uparrow$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

93. Assign A, B, C, D from given type of reaction.
$Fe^{2+}(aq.) + Cr_2O_7^{2-} + H^+ \longrightarrow Fe^{3+}(aq.) + Cr^{3+}$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

94. Assign A, B, C, D from given type of reaction. $I_2 + S_2O_3^{2-} \longrightarrow I^- + S_4O_6^{2-}$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

95. Assign A, B, C, D from given type of reaction. $Cu^{2+}(aq.) + 2I^- \longrightarrow CuI\downarrow + \frac{1}{2}I_2$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

96. Assign A, B, C, D from given type of reaction.
$H_3PO_2 + AgNO_2 \longrightarrow Ag\downarrow + H_3PO_4 + NO$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

97. Assign A, B, C, D from given type of reaction.
$H_3PO_2 + CuSO_4 \longrightarrow Cu\downarrow + H_3PO_4 + HNO_3$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

98. Assign A, B, C, D from given type of reaction.

$N_2O_3 \xrightarrow{R.T.} NO + NO_2$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either thermal combination redox reaction or thermal decomposition redox reaction.

(D) Both (A) and (C)

99. Assign A, B, C, D from given type of reaction. $CO + I_2O_5(s) \longrightarrow CO_2 + I_2$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

100. Assign A, B, C, D from given type of reaction $KMnO_4 \xrightarrow{\Delta} K_2MnO_4 + MnO_2 + O_2 \uparrow$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

101. Assign A, B, C, D from given type of reaction. $K_2Cr_2O_7 \xrightarrow{\Delta} K_2CrO_4 + Cr_2O_3 + O_2 \uparrow$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

102. Assign A, B, C, D from given type of reaction.

$(NH_4)_2Cr_2O_7 \xrightarrow{\Delta} N_2 \uparrow + Cr_2O_3 \downarrow + H_2O \uparrow$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

103. Assign A, B, C, D from given type of reaction. $N_2 + O_2 \xrightarrow{\text{High temp.}} NO \uparrow - \text{Heat}$

(A) for either thermal combination redox reaction or thermal decomposition redox reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) Both (A) and (C)

104. Assign A, B, C, D from given type of reaction. $NaNO_2 + FeSO_4 + H_2SO_4 \longrightarrow \underset{\text{(Ring complex)}}{[Fe(H_2O)_5NO]SO_4}$

(A) for disproportionation reaction.

(B) for comproportionation reaction.

(C) for either intermolecular redox reaction or displacement reaction.

(D) for either thermal combination redox reaction or thermal decomposition redox reaction.

105. $Cu^{2+}(aq.)$ does not undergo redox reaction with solution of

(A) $(NH_4)_2S$ (B) $Na_2S_2O_3$ (C) KI (D) NH_4SCN

106. Colour of acidified $K_2Cr_2O_7$ is not changed by

(A) H_2O_2 (B) $Sn^{2+}(aq.)$ (C) HF (D) HBr

107. $aIO_3^- + bI^- + 6H^+ \rightarrow cI_2 + 3H_2O$

In above reaction coefficient a, b and c are respectively

(A) 1, 5, 3 (B) 3, 1, 5 (C) 1, 3, 5 (D) 5, 3, 1

108. $H^+ + Cr_2O_7^{2-} + SO_3^{2-} \rightarrow Cr^{+3} + SO_4^{2-} + H_2O$ In balance reaction coefficient of H^+ and SO_4^{2-} will be respectively

(A) $3, 8$ (B) $3, 4$ (C) $4, 1$ (D) $8, 3$

109. The compound $YBa_2Cu_3O_7$ which shows superconductivity has copper in oxidation state ..... Assume that the rare earth element Yttrium is in its usual $+3$ oxidation state

(A) $3/7$ (B) $7/3$ (C) 3 (D) 7

110. For the redox reaction $MnO_4^- + C_2O_4^{-2} + H^+ \rightarrow Mn^{2+} + CO_2 + H_2O$ the correct coefficients of the reactants for the balanced reaction are

	MnO_4^-	$C_2O_4^{2-}$	H^+
(A)	2	5	16
(B)	16	5	2
(C)	5	16	2
(D)	2	16	5

111. The compound which could not act both as oxidising as well as reducing agent is

(A) SO_2 (B) MnO_2 (C) Al_2O_3 (D) CrO

112. The number of electrons to balance the following equation $NO_3^- + 4H^+ + e^- \rightarrow 2H_2O + NO$ is

(A) 5 (B) 4 (C) 3 (D) 2

113. The oxidation number of carbon in CH_2O is

(A) -2 (B) $+2$ (C) 0 (D) $+4$

114. One mole of N_2H_4 loses $10\,mol$ of electrons to form a new compound Y. Assuming that all nitrogen appear in the new compound, what is the oxidation state of N_2 in Y ? (There is no change in the oxidation state of hydrogen)

(A) $+3$ (B) -3 (C) -1 (D) $+5$

115. When Fe^{2+} changes to Fe^{3+} in a reaction

(A) It loses an electron (B) It gains an electron

(C) It loses a proton (D) It gains a proton

116. The process in which oxidation number increases is known as

(A) Oxidation (B) Reduction

(C) Auto-oxidation (D) None of the above

117. In an oxidation process, oxidation number

(A) Decreases (B) Increases

(C) Does not change (D) First increases then decreases

118. An oxidising agent is a substance, which

(A) Accept proton (B) Accept electron (C) Accept neutron (D) Donate electron

119. A reducing agent is a substance which can

(A) Accept electron (B) Donate electrons (C) Accept protons (D) Donate protons

120. Oxidation number of C in $C_6H_{12}O_6$ is

(A) $+6$ (B) -6 (C) 0 (D) $+4$

121. Oxidation number of iodine varies from

(A) -1 to $+1$ (B) -1 to $+7$ (C) $+3$ to $+5$ (D) -1 to $+5$

122. Oxidation state of oxygen in hydrogen peroxide is

(A) -1 (B) $+1$ (C) 0 (D) -2

123. The oxidation number of phosphorus in $Ba(H_2PO_2)_2$ is

(A) -1 (B) $+1$ (C) $+2$ (D) $+3$

124. Oxidation number of As atoms in H_3AsO_4 is

(A) -3 (B) $+4$ (C) $+6$ (D) $+5$

125. Oxidation number of carbon in $CH_3 - Cl$ is

(A) -3 (B) -2 (C) -1 (D) 0

126. The sum of the oxidation numbers of all the carbons in C_6H_5CHO is

(A) $+2$ (B) 0 (C) $+4$ (D) -4

127. Which is correctly matched

Compound $\rightarrow$ O.State of $C.M.I.$

(A) Ferrocene $\rightarrow$ $+3$

(B) Sodium Nitropruside $\rightarrow$ $+1$

(C) Brown Ring complex $\rightarrow$ $+3$

(D) None of these

128. The equivalent weight of $Na_2S_4O_6$ in the reaction $2Na_2S_2O_3 + I_2 \rightarrow Na_2S_4O_6 + 2NaI$ is :-

(A) M (B) $\frac{M}{8}$ (C) $\frac{M}{0.5}$ (D) $\frac{M}{2}$

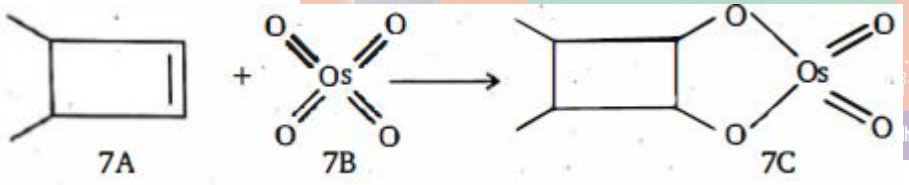
129. A compound containing x, y and z atoms oxidation no of x is $+3$, y is -5 and z is $+1$ then the possible formula of compound is

(A) xyz (B) xyz_2 (C) x_2yz (D) $(xy)_2z$

130. The correct set of oxidation numbers of Br in Br_3O_8 is

(A) $6,6,6$ (B) $6,4,6$ (C) $7,2,7$ (D) $7,6,3$

131. What is the oxidation state of osmium in $7B$ and $7C$, respectively ?



(A) $6,8$ (B) $8,6$ (C) $6,6$ (D) $8,8$

132. What is the equivalent weight of hydrochloric acid in given redox reaction $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$

If molar mass of hydrochloric acid is M.

(A) M (B) $M/2$ (C) $3M/4$ (D) $2M$

133. Oxidation state of $'S'$ in peroxodisulphuric acid and sodium tetrathionate

(A) $+6, +5, 0$ (B) $+6, +6, +6$ (C) $+6, +4, +2$ (D) $+6, +2, 0$

134. In following reaction $yMnO_4^- + xH^+ + C_2O_4^- \rightarrow yMn^{++} + 2CO_2 + \frac{x}{2}H_2O$, x and y are

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

135. 1 mole of $H_2C_2O_4$ is oxidised by x mole of MnO_4^- in strong basic medium and 1 mole of $NaHC_2O_4$ is oxidised by y mole of MnO_4^- in acidic medium. Ratio of x/y

is

(A) $2:1$ (B) $5:1$ (C) $3:1$ (D) $1:3$

136. $I^-(aq.) + MnO_4^-(aq.) \xrightarrow{H^+} X + Mn^{2+}(aq.)$

$I^-(aq.) + MnO_4^-(aq.) \xrightarrow[weakly\ OH^-]{Neutral\ or} Y + MnO_2$

$MnO_4^-(aq.) + Mn^{2+}(aq.) \xrightarrow{ZnSO_4} Z + 4H^+$

Products X, Y and Z are respectively :

(A) I_2, IO_3^-, MnO_2 (B) IO_3^-, I_2, MnO_2 (C) I_2, IO_3^-, MnO_4^{2-} (D) IO_3^-, I_2, MnO_4^{2-}

137. Which of the following compound undergoes disproportionation in presence of SO_3 gas ?

(A) K_2MnO_4 (B) K_2CrO_4 (C) I_2 (D) $Hg(NO_3)_2$

138. Comproportionation occurs between

(A) $Cl^-(aq.) + ClO^-(aq.) + OH^-(aq.)$

(B) $PH_3(g) + H_3PO_4$ acid

(C) $Na_2S(aq.) + Na_2SO_3(aq.)$

(D) $MnO_4^-(aq.) + Mn^{2+}(aq.) + ZnSO_4(aq.)$

139. A mixture of potassium chlorate, oxalic acid and sulphuric acid is heated. During the reaction which element undergoes maximum change in the oxidation number ?

(A) S (B) H (C) Cl (D) C

140. Oxidation numbers of P in PO_4^{3-}, of S in SO_4^{2-} and that of Cr in $Cr_2O_7^{2-}$ are respectively

(A) $+3, +6$ and $+5$ (B) $+5, +3$ and $+6$ (C) $-3, +6$ and $+6$ (D) $+5, +6$ and $+6$

141. Number of moles of MnO_4^- required to oxidize one mole of ferrous oxalate completely in acidic medium will be ..... moles

(A) 7.5 (B) 0.2 (C) 0.6 (D) 0.4

142. The oxidation states of sulphur in the anions $SO_3^{2-}, S_2O_4^{2-}$ and $S_2O_6^{2-}$ follow the order

(A) $S_2O_6^{2-} < S_2O_4^{2} < SO_3^{2-}$ (B) $S_2O_4^{2-} < SO_3^{2-} < S_2O_6^{2-}$

(C) $SO_3^{2-} < S_2O_4^{2-} < S_2O_6^{2-}$ (D) $S_2O_4^{2} < S_2O_6^{2-} < SO_3^{2-}$

143. Which substance is serving as a reducing agent in the following reaction $14H^+ + Cr_2O_7^{2-} + 3Ni \rightarrow 2Cr^{3+} + 7H_2O + 3Ni^{2+}$

(A) H_2O (B) Ni (C) H^+ (D) $Cr_2O_7^{2-}$

144. An element which never has a positive oxidation number in any of its compounds

(A) Boron (B) Oxygen (C) Chlorine (D) Fluorine

145. When $KMnO_4$ acts as an oxidising agent and ultimately forms $[MnO_4]^{-2}$, MnO_2, Mn_2O_3, Mn^{+2} then the number of electrons transferred in each case respectively is

(A) $4,3,1,5$ (B) $1,5,3,7$ (C) $1,3,4,5$ (D) $3,5,7,1$

146. $20\ gm$ iron pyrite, FeS_2, is roasted completely and SO_2 gas produced is absorbed completely in $400\ ml\ NaOH$ solution. If only $50\%\ NaOH$ is used in the reaction, the molarity of $NaOH$ solution was

(A) $\frac{5}{3}M$ (B) $\frac{10}{3}M$

(C) $\frac{5}{6}M$ (D) $\frac{20}{3}M$

147. Define the oxidation states of Mn in product of the given reaction

$3K_2MnO_4 + 2H_2O + 4CO_2 \rightarrow 2X + Y + 4KHCO_3$

(A) $+7,+4$ (B) $+6,+3$ (C) $+7,+2$ (D) $+5,+5$

148. When CrI_3 oxidises to $Cr_2O_7^{-2}$ and IO_4^- , equivalent mass of CrI_3 will be :-

(A) $\frac{M}{33}$ (B) $\frac{M}{27}$ (C) $\frac{M}{28}$ (D) $\frac{M}{24}$

149. $6Fe_3O_4 + 2MnO_4^- + H_2O \rightarrow 9Fe_2O_3 + 2MnO_2 + 2OH^-$

Calculate the equivalent weight of Fe_3O_4 in the above equation

(A) M (B) $\frac{3M}{8}$ (C) $\frac{M}{2}$ (D) $\frac{M}{6}$

150. In the redox reaction

$x\ MnO + y\ PbO_2 + z\ HNO_3 \rightarrow a\ HMnO_4 + b\ Pb(NO_3)_2 + c\ H_2O$

(A) $x = 2, y = 5, z = 10$ (B) $x = 2, y = 7, z = 8$

(C) $x = 2, y = 5, z = 8$ (D) $x = 2, y = 5, z = 5$

----- "Don't be afraid to fail, be afraid not to try" -----