ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

SOLUTION-11(CLASS-11)

TOPIC- REDOX EQUILIBRIA

SUBTOPIC- DETERMINATION OF OXIDATION NUMBER

SUBJECT – CHEMISTRY **F.M. - 15**

DURATION – 30 mins **DATE -26.06.20**

1.1 **The equivalent mass of $K_2Cr_2O_7$ in acidic medium is expressed in terms of its molecular mass (M) as-**

(a) M/2 (b) M/5 (c) M/3 (d) M/6

Ans. d

1.**2** **In which of the following compounds, nitrogen exhibits the highest oxidation state-**

(a) N_2H_4 (b) NH_3 (c) N_3H (d) NH_2OH

Ans. c

1.3 **Which of the compounds can exist together?**

(a) $HgCl_2$, $SnCl_2$ (b) $FeCl_3$, KI (c) $FeCl_3$, $SnCl_2$ (d) $FeCl_2$, $SnCl_2$

Ans. d

1.4 **One mole of ferrous oxalate requires____ moles of MnO_4^- to get oxidised completely in an acidic medium-**

(a) 0.6 moles (b) 0.4 moles (c) 0.2 moles (d) 7.5 moles

Ans. b

1.5 **H_2O_2 changes $Cr_2O_7^{2-}$ ion to CrO_5 in an acidic medium, oxidation state of Cr in CrO_5 is-**

(a) +6 (b) +5 (c) -10 (d) +3

Ans. a

1.6 **H_2SO_4 acts as a strong oxidising agent. In which of the reaction, is it not acting as an oxidising agent?**

(a) $C + 2H_2SO_4 \rightarrow CO_2 + 2SO_2 + 2H_2O$ (b) $CaF_2 + 2H_2SO_4 \rightarrow CaSO_4 + 2HF$

(c) $S + 2H_2SO_4 \rightarrow 3SO_2 + H_2O$ (d) $Cu + 2H_2SO_4 \rightarrow CuSO_4 + SO_2 + 2H_2O$

Ans. b

1.7 **During a reaction of oxalic acid, potassium chlorate and sulphuric acid, the oxidation number of which of the element undergoes a maximum change-**

(a) H (b) S (c) C (d) Cl

Ans. d

1.8 **Find the redox reaction-**

(a) In atmosphere, O_3 from O_2 by lighting

(b) Reaction of H_2SO_4 with NaOH

(c) Both oxidation and reduction reaction

(d) Evaporation of water

Ans. c

1.9 **Find the oxidation state of I in $H_4IO_6^-$**

(a) +7 (b) + (c) +1 (d) -1

Ans. a

1.10 **Which among the following compounds is the most reducing compound?**

(a) H_2S (b) HNO_2 (c) $SnCl_2$ (d) H_2SO_3

Ans. a

1.11 **In which of the following complex, the oxidation number of Fe is +1?**

(a) $Fe_4[Fe(CN)_6]_3$ (b) $[Fe(H_2O)_5NO]SO_4$ (c) $[FeBr_4]^-$ (d) $[Fe(H_2O)_6]^{2-}$

Ans. b

1.12 **Which among the following is the strongest oxidising agent?**

(a) H_2O_2 (b) O_3 (c) $K_2Cr_2O_7$ (d) $KMnO_4$

Ans. b

1.13 **The oxidation states of P-atom in $H_4P_2O_5$, $H_2P_2O_6$ and $H_2P_2O_7$ are respectively-**

a) +3, +4, +5 b) +3, +5, +4 c) +5, +3, +4 d) +5, +4, +3

Ans. a

1.14 **The oxidation states of Sulphur in $Na_2S_2O_3$ and H_2SO_5 are-**

a) +3, +5 b) +4, +6 c) +6, +6 d) +6, +5

Ans. c

1.15 **The oxidation number of oxygen in O_2F_2, KO_2 and OF_2 are respectively-**

a) +1,-1/2,+2 b) +1,-1/2,+1/2 c) +1/2,-1/2,+2 d) +1,-1/2,+2/3

Ans. a

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