ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

SOLUTION-14(CLASS-11)

TOPIC- REDOX EQUILIBRIA

SUBTOPIC-ION-ELECTRON METHOD AND OXIDATION METHOD

SUBJECT – CHEMISTRY **F.M. - 15**

DURATION – 30 mins **DATE -30.06.20**

1.1 $aFe^{2+} + bCr_2O_7^{2-} + cH^+ \longrightarrow dFe^{3+} + eCr^{3+} + fH_2O$

(a) a=6 , e=2 (b) a=2 , e= 3 (c) a=4 , e= 3 (d) a= 1 , e=5

Ans. a

1.2 $aMnO_4^- + bFe^{2+} + cH^+ \longrightarrow mMn^{2+} + nFe^{3+} + pH_2O$

(a) a=1, c=8 (b) a=2, c=4 (c) a=4, c=3 (d) a=1, c= 2

Ans. a

1.3 $aCr_2O_7^{2-} + bI^- + cH^+ \longrightarrow mCr^{3+} + nI_2 + qH_2O$

(a) a=1, q=7(b) a=2, q=3(c) a=1, q=2(d) a=2, q= 3

Ans. a

1.4 $aMnO_4^- + bH^+ + de \longrightarrow mMn^{2+} + nH_2O$

(a) a=1, b=4 (b) a=1, b=8 (c) a=2, b=3 (d) a=2, b=4

Ans. b

1.5 $aZn + bNaOH + cNaNO_3 \longrightarrow dNa_2ZnO_2 + eNH_3 + fH_2O$

(a) a=2, c=2 (b) a=1, c= 3 (c) a=4 c=1(d) a= 3,c=5

Ans. c

1.6 $aBiO_3^- + bH^+ + de \longrightarrow pBi^{3+} + qH_2O$

(a) a=2, d=3(b) a=1, d= 2(c) a=1, d= 3 (d) a= 4, d=5

Ans. b

1.7 $aIO_3^- + bI^- + cH^+ \longrightarrow dI_2 + eH_2O$

(a) b= 5 e=3 (b) b=3, e= 4 (c) b=2, e= 1 (d) b= 5, e= 2

Ans. a

1.8 $mCu + nHNO_3 \longrightarrow pCu(NO_3)_2 + qNO_2 + rH_2O$

(a) n=1, q=2 b) n= 3, q=4 c) n=1 q=4 d) n=1, q=2

Ans. c

1.9 **$mCuO + nNH_3 \longrightarrow qCu + rN_2 + sH_2O$**

(a) m=1, r= 2b) m=3 r= 1c) m=1, r= 3d)m=2, r= 4

Ans. b

1.10**$aP_4 + bNaOH + cH_2O \longrightarrow dNa_2H_2PO_2 + ePH_3$**

(a) a=1, d=2 (b) a=3, d= 4(c) a=1 d=3(d) a=1, d=3

Ans. c

1.11**$aCr_2O_3 + bNa_2O_2 + cH_2O \longrightarrow mNa_2CrO_4 + nNaOH$**

(a) b=3, n=4 b) b=3 n= 2 c) b=1, n=2 d)b=3, n= 4

Ans. b

1.12 **$xAl + yNaOH + zH_2O \longrightarrow mNa_2AlO_2 + nH_2$**

(a) y=1, m=2 b) y=2 m= 2c) y=3, m=4d) y=1, m= 1

Ans. b

1.13 **Determine the equivalent weights of the following marked compounds by applying the oxidation number and electronic methods-**

$\underline{MnO_2} + 4H^+ \longrightarrow Mn^{2+} + 2H_2O$

(a)25b) 37.2c) 158d)27.5

Ans. d

1.14 **Determine the equivalent weights of the following marked compounds by applying the oxidation number and electronic methods-**

$\underline{HNO_3} + H^+ \longrightarrow NO + 2H_2O$

(a) 63 (b) 21 (c) 13(d) 31

Ans. b

1.15**Determine the equivalent weights of the following marked compounds by applying the oxidation number and electronic methods-**

$\underline{SO_2} + 2H_2O \longrightarrow H_2SO_4$

(a) 32b) 64c) 25d)23

Ans. a

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