Set – 1

Table 3.1: Standard Electrode Potentials at 298 K

Ions are present as aqueous species and H_2O as liquid; gases and solids are shown by g and s.

Reaction (Oxidised form + ne^- $\rightarrow$ Reduced form)	$E^\ominus$/V
$F_2(g) + 2e^- \rightarrow 2F^-$	2.87
$Co^{3+} + e^- \rightarrow Co^{2+}$	1.81
$H_2O_2 + 2H^+ + 2e^- \rightarrow 2H_2O$	1.78
$MnO_4^- + 8H^+ + 5e^- \rightarrow Mn^{2+} + 4H_2O$	1.51
$Au^{3+} + 3e^- \rightarrow Au(s)$	1.40
$Cl_2(g) + 2e^- \rightarrow 2Cl^-$	1.36
$Cr_2O_7^{2-} + 14H^+ + 6e^- \rightarrow 2Cr^{3+} + 7H_2O$	1.33
$O_2(g) + 4H^+ + 4e^- \rightarrow 2H_2O$	1.23
$MnO_2(s) + 4H^+ + 2e^- \rightarrow Mn^{2+} + 2H_2O$	1.23
$Br_2 + 2e^- \rightarrow 2Br^-$	1.09
$NO_3^- + 4H^+ + 3e^- \rightarrow NO(g) + 2H_2O$	0.97
$2Hg^{2+} + 2e^- \rightarrow Hg_2^{2+}$	0.92
$Ag^+ + e^- \rightarrow Ag(s)$	0.80
$Fe^{3+} + e^- \rightarrow Fe^{2+}$	0.77
$O_2(g) + 2H^+ + 2e^- \rightarrow H_2O_2$	0.68
$I_2 + 2e^- \rightarrow 2I^-$	0.54
$Cu^+ + e^- \rightarrow Cu(s)$	0.52
$Cu^{2+} + 2e^- \rightarrow Cu(s)$	0.34
$AgCl(s) + e^- \rightarrow Ag(s) + Cl^-$	0.22
$AgBr(s) + e^- \rightarrow Ag(s) + Br^-$	0.10
$2H^+ + 2e^- \rightarrow H_2(g)$	**0.00**
$Pb^{2+} + 2e^- \rightarrow Pb(s)$	–0.13
$Sn^{2+} + 2e^- \rightarrow Sn(s)$	–0.14
$Ni^{2+} + 2e^- \rightarrow Ni(s)$	–0.25
$Fe^{2+} + 2e^- \rightarrow Fe(s)$	–0.44
$Cr^{3+} + 3e^- \rightarrow Cr(s)$	–0.74
$Zn^{2+} + 2e^- \rightarrow Zn(s)$	–0.76
$2H_2O + 2e^- \rightarrow H_2(g) + 2OH^-(aq)$	–0.83

Increasing strength of oxidising agent ↑

Increasing strength of reducing agent ↓

Q1. Which of the following has the highest standard electrode potential?

A. F_2
B. Co^{+3}
C. H_2O_2
D. Li

Ans. (A)

Q2. Which of the following has the least standard electrode potential?

A. F_2
B. K
C. Ca
D. Li

Ans. (D)

Q3. Which of the following has positive standard electrode potential?

A. Sn
B. Pb
C. Ag
D. Ni

Ans. (C)

Q4. Which of the following has positive standard electrode potential?

A. H2O
B. Fe^{3+}
C. Ag^{+}
D. Br_2

Ans. (A)

Set – 2

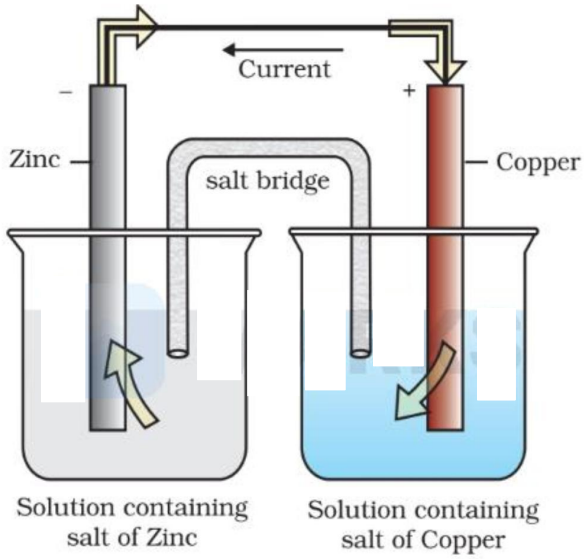

Fig. 3.1: Daniell cell having electrodes of zinc and copper dipping in the solutions of their respective salts.

Q1. In Daniel cell, electrodes are-

A. Zinc,Sulphur
B. Zinc,Copper
C. Silver,Copper
D. Nickel,Sulphur

Ans. (B)

Q2. Which of the following is not the use of Salt Bridge-

A. to maintain electrical neutrality
B. prevents the diffusion of solution
C. provides a free path for the migration of ions
D. It accumulates charges

Ans. (D)

Q3. Metal salts have which anions in its solution?

A. Sulphates
B. Carbonates

C. Chlorides
D. Bromides

Q4. Metal salts have which anions in its solution?

A. Sulphates
B. Carbonates
C. Chlorides
D. Bromides

Ans. (A)

Set – 3

Table 3.2: The values of Conductivity of some Selected Materials at 298.15 K

Material	Conductivity/ S m^{-1}	Material	Conductivity/ S m^{-1}
Conductors		*Aqueous Solutions*	
Sodium	2.1×10^{3}	Pure water	3.5×10^{-5}
Copper	5.9×10^{3}	0.1 M HCl	3.91
Silver	6.2×10^{3}	0.01M KCl	0.14
Gold	4.5×10^{3}	0.01M NaCl	0.12
Iron	1.0×10^{3}	0.1 M HAc	0.047
Graphite	1.2×10	0.01M HAc	0.016
Insulators		*Semiconductors*	
Glass	1.0×10^{-16}	CuO	1×10^{-7}
Teflon	1.0×10^{-18}	Si	1.5×10^{-2}
		Ge	2.0

Q1. Which has the highest conductivity among the following-

A. Graphite
B. Gold
C. Silver
D. Copper

Ans. (C)

Q2. Which among the following has least conductivity-

A. Graphite
B. Iron
C. Sodium
D. Copper

Ans. (A)

Q3. Conductivity of Conductors are of order-

A. 10^2
B. 10
C. 10^5
D. 10^3

Ans. (D)