DPP
DAILY PRACTICE PROBLEMS

Class : XIIth **Subject : CHEMISTRY**
Date : **DPP No. : 7**

Topic :- Electro Chemistry

1. Use of electrolysis is
   a) Electrorefining b) Electroplating c) Both (a) and (b) d) None of these
2. What is the cell reaction occurring in Daniel cell (Galvanic cell)?
   a) $Cu(s) + ZnSO_4(aq) \longrightarrow CuSO_4(aq) + Zn(s)$
   b) $Zn(s) + CuSO_4(aq) \rightarrow Cu(s) + ZnSO_4(aq)$
   c) $Ni(s) + ZnSO_4(aq) \longrightarrow NiSO_4(aq) + Zn(s)$
   d) $2Na(s) + CdSO_4(aq) \longrightarrow Na_2SO_4(aq) + Cd(s)$
3. **Electrolyte KCl KNO_3 HCl NaOAc NaCl**
Λ^{∞}(S cm^2 mol^{-1}) 149.9 145.0 426.2 91.0 126.5

Calculate Λ^{∞}_{HOAc} using appropriate molar conductances of the electrolytes listed above at infinite dilution in H_2O at 25°C.
   a) 217.5 b) 390.7 c) 552.7 d) 517.2
4. Is the reaction, $2Al + 3Fe^{2+} \longrightarrow 2Al^{3+} + 3Fe$ possible?
   a) No, because standard oxidation potential of $Al < Fe$
   b) Yes, because standard oxidation potential of $Al > Fe$
   c) Neither (a) nor (b)
   d) Data are unpredictable
5. What will be the electrode potential of that hydrogen electrode is filled with HCl solution of pH value 1.0?
   a) -59.15 V b) +59.15 c) +59.15 mV d) -59.15 mV
6. The conductivity of a 0.01 N solution is found to be 0.005 $ohm^{-1}\ cm^{-1}$. The equivalent conductivity of the solution will be
   a) $5 \times 10^{-2}\ ohm^{-1}\ cm^2\ equiv^{-1}$ b) $5.00 \times 10^{-3}\ ohm^{-1}\ cm^2$
   c) $500\ ohm^{-1}\ cm^{-2}\ equiv^{-1}$ d) $0.5\ ohm^{-1}\ cm^2\ equiv^{-1}$
7. A correct electrochemical series can be obtained from K, Ca, Na, Al, Mg, Zn. Fe, Pb, H, Cu, Hg, Ag, Au by interchanging :
   a) Al and Mg b) Zn and Fe c) Zn and Pb d) Pb and H
8. The emf of the cell $Zn \mid Zn^{2+}(0.01\ M) \parallel Fe^{2+}(0.001\ M) \mid Fe$ at 298 K is 0.2905. The value of equilibrium constant for the cell reaction is

a) $10^{10^{\frac{0.32}{0.0298}}}$ b) $e^{\frac{0.32}{0.0295}}$ c) $10^{\frac{0.32}{0.0591}}$ d) $10^{\frac{0.26}{0.0295}}$

9. When Alead storage battery is discharged
   a) Lead sulphate is consumed b) SO_2 is evolved
   c) Lead is formed d) Sulphuric acid is consumed
10. EMF of hydrogen electrode in term of pH is (at 1 atm pressure)
   a) $E_{H_2} = \frac{RT}{F} \times pH$ b) $E_{H_2} = \frac{RT}{F} \cdot \frac{1}{pH}$
   c) $E_{H_2} = \frac{2.303RT}{F}.pH$ d) $E_{H_2} =$ - 0.0591 pH
11. If $E^{\circ}_{Fe^{2+}/Fe} = -0.441$ V and $E^{\circ}_{Fe^{3+}/Fe^{2+}} = 0.771$ V, the standard e.m.f. of the reaction $Fe + 2Fe^{3+} \longrightarrow 3Fe^{2+}$ will be :
   a) 1.212 V b) 0.111 V c) 0.330 V d) 1.653 V
12. When Zn piece is kept in $CuSO_4$ solution, copper gets precipitated because:
   a) Standard reduction potential of zinc is more than copper
   b) Standard reduction potential of zinc is less than copper
   c) Atomic number of zinc is larger than copper
   d) Atomic number of zinc is lower than copper
13. Ionic mobility of of electricity is 1 M solution of :
   a) CH_3COOH b) H_2SO_4 c) H_3PO_4 d) Boric acid
14. The equivalent conductivity of 0.1 M weak acid is 100 times less than that at infinite dilution. The degree of dissociation of weak electrolyte at 0.1 M is :
   a) 100 b) 10 c) 0.01 d) 0.001
15. Standard electrode potential of cell $H_2|H^+||Ag^+|Ag$ is (Given, $E^{\circ}_{Ag^+/Ag} = 0.80$ V)
   a) 0.4 V b) 0.8 V c) 1.4 V d) 1.8 V
16. If the current is passed into the solution of an electrolyte:
   a) Anions move towards anode, cations towards cathode
   b) Anions and cations both move towards anode
   c) Anions move towards cathode, cations towards anode
   d) No movement of ions takes place
17. The element that is easiest to be reduced is :
   a) Fe b) Cu c) Ag d) Sn
18. Standard reduction potential for, $Li^+|Li$, $Zn^{2+}|Zn$, $H^+|H_2$ and $Ag^+|Ag$ is -3.05, -0.762, 0.00 and +80 V. Which has highest reducing capacity?
   a) Ag b) H_2 c) Zn d) Li
19. What is the quantity of electricity (in Coulombs) required to deposit all the silver from 250mL of 1 M$AgNO_3$ solution?
   a) 2412.5 b) 24125 c) 4825.0 d) 48250
20. When 1 faraday of electricity is passed through $CuSO_4$ solution, number of atoms formed is :
   a) 6.02×10^{23} b) 3.01×10^{23} c) 2 d) 6.02×10^{23}