DPP
DAILY PRACTICE PROBLEMS

Class : XIIth **Subject : CHEMISTRY**
Date : **DPP No. : 10**

Topic :- Electro Chemistry

1. The units of equivalent conductance, are
   a) $\Omega\ cm^2 equiv^{-1}$ b) $\Omega\ cm^2$ equiv c) $\Omega^{-1}\ cm^2 equiv^{-1}$ d) $\Omega\ cm^2 equiv$
2. For strong electrolytes the plot of molar conductance $vs\sqrt{C}$ is
   a) Parabolic b) Linear c) Sinusoidal d) Circular
3. The value of Λ_{eq}^{∞} for NH_4Cl, NaOH and NaCl are respectively,149.74,248.1 and $126.4\Omega^{-1}\ cm^2$ $equiv^{-1}$. The value of Λ_{eq}^{∞} of NH_4OH is
   a) 371.44 b) 271.44
   c) 71.44 d) Cannot be predicted from given data
4. The standard electrode potentials of Ag^+ / Ag is +0.80 V and Cu^+ /Cu is +0.34 V. These electrodes are connected through Asalt bridge and if
   a) Copper electrode acts as Acathode then E°_{cell} is +0.46 V
   b) Silver electrode acts as anode then E°_{cell} is -0.34 V
   c) Copper electrode acts as anode then E°_{cell} is +0.46 V
   d) Silver electrode acts as Acathode then E°_{cell} is -0.34 V
5. e.m.f. of cell $Ni|Ni^{2+}(0.1M)||\ Au^{3+}(1.0\ M)|Au\ \ is$....., if $E°$ for $Ni^{2+}|Ni$ is -0.25 V, $E°$ for $Au^{3+}|Au$ is 1.50 V.
   a) $+1.25$ V b) -1.75 V c) $+1.75$ V d) $+4.0$ V
6. The position of some metals in the electrochemical series in decreasing electropositive character is given as $Mg > Al > Zn > Cu > Ag$. What will happen, if a copper spoon is used to stir a solution of aluminium nitrate?
   a) The spoon will get coated with aluminium
   b) An alloy of copper and aluminium is formed
   c) The solution becomes blue
   d) There is no reaction
7. Which of the following statements is correct? Galvanic cell converts
   a) Chemical energy into electrical energy
   b) Electrical energy into chemical energy
   c) Metal from its elemental state to the combined state
   d) Electrolyte into individual ions

8. For cell reaction,

$Zn + Cu^{2+} \longrightarrow Zn^{2+} + Cu$

Cell representation is

a) $Zn \mid Zn^{2+} \parallel Cu^{2+} \mid Cub)$ $Cu \mid Cu^{2+} \parallel Zn^{2+} \mid Zn$

c) $Cu \mid Zn^{2+} \parallel Zn \mid Cu^{2+}d)$ $Cu^{2+} \mid Zn \parallel Zn^{2+} \mid Cu$

9. By passing 9.65 A current for 16 min 40 s , the volume of O_2 liberated at STP will be

a) 280 mL b) 560 mL c) 1120 mL d) 2240 mL

10. Consider the following disproportionation

$2ClO_3^- \rightleftharpoons ClO_2^- + ClO_4^-$

If the initial concentration of perchlorate ion is 0.1 M what it would be at equilibrium at 298 K? $\left(E^\circ_{ClO_4^- / ClO_3^-} = 0.36 \text{ V} \text{ and } E^\circ_{ClO_3^- / ClO_2^-} = 0.33 \text{ V}\right)$

a) 0.1 M b) 0.05 M c) 0.07 M d) 0.19 M

11. When Cu reacts with $AgNO_3$ solution, the reaction takes place is

a) Oxidation of Cu b) Reduction of Cu c) Oxidation of Ag d) Reduction of NO_3^-

12. $E°$ for $F_{2+} + 2e = 2F^-$ is 2.8 V, $E°$ for $1/2\ F_2 + e = F^-$ is:

a) 2.8 V b) 1.4 V c) -2.8 V d) -1.4 V

13. Which one of the following solutions has highest conductance power?

a) 0.1 M CH_3COOH b) 0.1 M NaCl c) 0.1 M KNO_3 d) 0.1 M HCl

14. Standard electrode potentials of $Fe^{2+} + 2e \longrightarrow Fe$ and $Fe^{+} + 3e \longrightarrow Fe$ are -440 V and -0.036 V respectively. The standard electrode potential ($E°$) for $Fe^{3+} + e \longrightarrow Fe^{2+}$ is:

a) -0.476 V b) -0.404 V c) $+0.404$ V d) $+0.772$ V

15. Stainless steel does not rust because

a) Chromium and nickel combine with iron

b) Chromium forms an oxide layer and protects iron from rusting

c) Nickel present in it, does not rust

d) Iron forms Ahard chemical compound with chromium present in it

16. Cu(II) sulphate solution is treated separately with KCl and KI. In which case, Cu^{2+} be reduced to Cu^{+}?

a) With KCl b) With KI c) With both (a) and (b) d) None of these

17. The main function of the salt bridge is :

a) To allow ions to go from one cell to another

b) To provide link between two half cells

c) To keep the e.m.f. of the cell positive

d) To maintain electrical neutrality of the solution in two half cells

18. When 9.65 C of electricity is passed through a solution of silver nitrate (atomic weight of Ag = 107.87 taking as 108), the amount of silver deposited is

a) 5.8 mg b) 10.8 mg c) 15.8 mg d) 20.8 mg

19. The oxidation number of S in $Na_2S_4O_6$ is

a) 2.5 for each S atom
b) +2 and +3 (two S have +2 and other two have +3)
c) +2 and +3 (three S have +2 and one S has +3)
d) +5 and 0 (two S have +5 and other two have zero)

20. E° values of Mg^{2+} / Mg is -2.37 V, of Zn^{2+} / Zn is -0.76 V and Fe^{2+} / Fe is -0.44 V. Which of the statements is correct?

a) Zn will reduce Fe^{2+}
b) Zn will reduce Mg^{2+}
c) Mg oxidises Fe
d) Zn oxidises Fe