# DPP
DAILY PRACTICE PROBLEMS

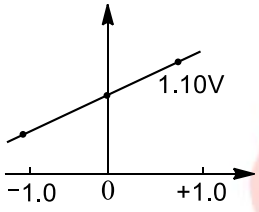
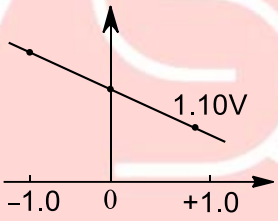
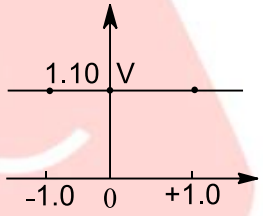
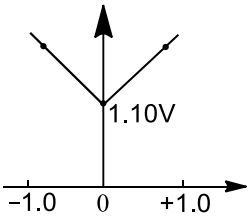
**Class : XIIth** **Subject : CHEMISTRY**
**Date :** **DPP No. : 2**

## Topic :- Electro Chemistry

1. In electrolytic purification, which of the following is made of impure metal?
   a) Anode b) Cathode c) Both (a) and (b) d) None of these

2. The specific conductivity of 0.1 N KCl solution is $0.0129\ \Omega^{-1}\text{cm}^{-1}$. The resistance of the solution in the cell 100Ω. The cell constant of the cell will be
   a) 1.10 b) 1.29 c) 0.56 d) 2.80

3. Which graph correctly correlates $E_{\text{Cell}}$ as a function of concentrations for the cell (for different values of $M$ and $M'$)?
   $\text{Zn}(s) + \text{Cu}^{2+}(M) \longrightarrow \text{Zn}^{2+}(M') + \text{Cu}(s)$;
   $E^{\circ}_{\text{Cell}} = 1.10\ V$
   $X - \text{axis} : \log_{10} \frac{[\text{Zn}^{2+}]}{[\text{Cu}^{2+}]}, Y - \text{axis} : E_{\text{Cell}}$

   a) 
   
   b) 
   
   c) 
   
   d) 
   

4. In acidic medium $\text{MnO}_4^-$ is converted to $\text{Mn}^{2+}$. The quantity of electricity in faraday required to reduce 0.5 mole of $\text{MnO}_4^-$ to $\text{Mn}^{2+}$ would be
   a) 2.5 b) 5 c) 1 d) 0.5

5. In electrolysis, oxidation takes place at:
   a) Anode
   b) Cathode
   c) The anode as well as cathode
   d) The surface of electrolyte solution

6. A depolariser used in dry cell batteries is :
   a) Ammonium chloride b) Manganese dioxide c) Potassium hydroxide d) Sodium phosphate

7. The $E^{\circ}_{M^{3+}/M^{2+}}$ values for Cr, Mn, Fe and Co are $-0.41, +1.57, +0.77$ and $+1.97$ V respectively. For which one of these metals, the change in oxidation state from $+2$ to $+3$ is easiest?
   a) Fe b) Mn c) Co d) Cr

8. The standard reduction electrode potential values of the elements $A, B$ and $C$ are + 0.68, –2.50 and – 0.50 V respectively. The order of their reducing power is :
   a) $A > B > C$ b) $A > C > B$ c) $C > B > A$ d) $B > C > A$

9. The number of electrons involved in the reaction when a faraday of electricity is passed through an electrolyte in solution is :
a) $12 \times 10^{46}$ b) 96500 c) $8 \times 10^{16}$ d) $6.02 \times 10^{23}$

10. The electrolysis of a solution resulted in the formation of $H_2$ at the cathode and $Cl_2$ at the anode. The liquid is:
a) Pure water
b) $H_2SO_4$ solution
c) NaCl solution in water
d) $CuCl_2$ solution in water

11. The passage of electricity in the Daniell cell when Zn and Cu electrodes are connected:
a) From Cu to Zn inside the cell
b) From Cu to Zn outside the cell
c) From Zn to Cu outside the cell
d) None of the above

12. Ni / $Ni^{2+}$ [1.0 M] || $Au^{3+}$ [1.0 M] / Au where $E^{\circ}$ for $Ni^{2+}$ /Ni is $-0.250$ V; and $E^{\circ}$ for $Au^{3+}$ / Au is 0.150 V. The emf of the cell is
a) $+1.25$ V b) -1.75 V c) $+1.75$ V d) $+0.4$ V

13. The product obtained at anode when 50% $H_2SO_4$ aqueous solution is electrolysed using platinum electrodes is
a) $H_2SO_3$ b) $H_2S_2O_8$ c) $O_2$ d) $H_2$

14. The approximate e.m.f. of a dry cell is :
a) 2.0 V b) 1.2 V c) 6 V d) 1.5 V

15. $E_1, E_2$, and $E_3$ are the emfs of the following three galvanic cells respectively
I. Zn (s) | $Zn^{2+}$ (0.1 M) || $Cu^{2+}$ (1 M) | Cu (s)
II. Zn (s) | $Zn^{2+}$ (1 M) || $Cu^{2+}$ (1 M) | Cu (s)
III. Zn (s) | $Zn^{2+}$ (1 M) || $Cu^{2+}$ (0.1 M) | Cu (s)
Which one of the following is true?
a) $E_2 > E_1 > E_3$ b) $E_1 > E_2 > E_3$ c) $E_3 > E_1 > E_2$ d) $E_3 > E_2 > E_1$

16. The fraction of the total current carried by an ion is known as:
a) Transport number of that ion
b) Conductance of that ion
c) Both(a) and (b)
d) None of the above

17. In a galvanic cell, which is wrong?
a) Anode has negative polarity
b) Cathode has positive polarity
c) Reduction takes place at anode
d) Reduction takes place at cathode

18. The rusting of iron takes place as follows
$2H^+ + 2e^- + \frac{1}{2} O_2 \longrightarrow H_2O\ (l)$;
$E^{\circ} = +1.23\ V$

$Fe^{2+} + 2e^- \longrightarrow Fe\ (s); \quad E^\circ = -0.44\ V$
Calculate $\Delta G°$ for the net process.
a) -322 kJ $mol^{-1}$ b) -161 kJ $mol^{-1}$ c) -152 kJ $mol^{-1}$ d) -76 kJ $mol^{-1}$

19. What weight of copper will be deposited by passing 2 faraday of electricity through a solution of Cu(II) salt?
a) 35.6 g b) 63.5 g c) 6.35 g d) 3.56 g

20. Chlorine cannot displace :
a) Fluorine from NaF b) Iodine from NaI c) Bromine from NaBr d) None of these