DPP
DAILY PRACTICE PROBLEMS

Class : XIIth **Subject : CHEMISTRY**
Date : **DPP No. : 5**

Topic :- Electro Chemistry

1. The standard e.m.f. of a galvanic cell involving the cell reaction with $n = 2$ is found to be 0.295 V at 25° C. The equilibrium constant of the reaction is :
   a) 2.0×10^{11} b) 4.0×10^{12} c) 1.0×10^{2} d) 1.0×10^{10}
2. If an iron rod is dipped in $CuSO_4$ solution, then :
   a) Blue colour of the solution turns red
   b) Brown layer is deposited on iron rod
   c) No change occurs in the colour of the solution
   d) None of the above
3. Which of the following liberates hydrogen on reaction with dilute H_2SO_4?
   a) Al b) Fe c) Cu d) Hg
4. Agalvanic cell with electrode potential of 'A' $= +2.23$ V and 'B' $=$ -1.43 V. The value of E°_{cell} is
   a) 3.66 V b) 0.80 V c) -0.80 V d) -3.66 V
5. A galvanic cell is composed of two hydrogen electrodes, one of which is a standard one. In which of the following solutions should the other electrode be immersed to get maximum e. m. f.?
   a) 0.1 M HCl b) 0.1 M CH_3COOH c) 0.1 M H_3PO_4 d) 0.1 M H_2S
   O_4
6. Which metal does not give the following reaction?
   M + water or steam $\longrightarrow$ oxide + $H_2\uparrow$
   a) Iron b) Sodium c) Mercury d) Magnesium
7. 4.5 g of Al (at. mass 27 amu) is deposited at cathode from Al^{3+} solution by a certain quantity of charge. The volume of H_2 produced at STP from H^+ ions in solution by the same quantity of charge will be :
   a) 11.2 L b) 44.8 L c) 5.6 L d) 22.4 L
8. In the electrolysis of acidulated water, it is desired to obtain 1.12 cc of hydrogen per second under STP condition. The current to be passed is
   a) 1.93 A b) 9.65 A c) 19.3 A d) 0.965 A
9. The speed of ions during passage of current depends upon :
   a) Nature of ion b) Potential gradient c) Dilution of solution d) All of these
10. The best way to prevent rusting of iron is
    a) Making it cathode b) Putting in saline water
    c) Both (a) and (b) d) None of these

111. The hydrogen electrode is dipped in a solution of pH = 3 at 25°C. The reduction potential of the cell would be :

a) 0.177 V b) – 0.177 V c) 0.087 V d) 0.059 V

12. Conductivity (unit Siemen) is directly proportional to area of the vessel and the concentration of the solution in it and is inversely proportional to the length of the vessel. Then, the units of the constant of proportionality is

a) $S^2\ m^2mol$ b) $S^2\ m^2mol^{-2}$ c) $S\ m^2mol^{-1}$ d) $S\ m\ mol^{-1}$

13. The metal that cannot be produced on reduction of its oxide by aluminium is :

a) K b) Mn c) Cr d) Fe

14. In the concentration cells, the electrical energy is produced due to :

a) Oxidation of fuel
b) Heat energy
c) Chemical reaction
d) Transfer of a substance from one concentration to other

15. How many faraday are needed to reduce a mole of MnO_4^- of Mn^{2+}?

a) 4 b) 5 c) 3 d) 2

16. For the cell,

$T1 \mid T1^+ (0.001\ M) \parallel Cu^{2+} (0.1\ M) \mid Cu$

E_{cell} at 25°C is 0.83 V. E_{cell} can be increased

a) By decreasing $[Cu^{2+}]$ b) By increasing $[Cu^{2+}]$
c) By increasing $[T1^+]$ d) None of these

17. In an aqueous solution, hydrogen (H_2) will not reduce :

a) Fe^{3+} b) Cu^{2+} c) Zn^{2+} d) Ag^+

18. How many faradays of electricity are required to electrolyse 1 mole $CuCl_2$ to copper metal and chlorine gas?

a) 1 F b) 2 F c) 3 F d) 4 F

19. Which statement is not correct?

a) Conductance of an electrolytic solution increases with dilution
b) Conductance of an electrolytic solution decreases with dilution
c) Specific conductance of an electrolytic solution decreases with dilution
d) Equivalent conductance of an electrolytic solution increase with dilution

20. The correct value of e.m.f. of cell is given by :

i) $E_{cell} = E_{OP}$ anode $- E_{RP}$ cathode
ii) $E_{cell} = E_{OP}$ anode $+ E_{RP}$ cathode
iii) $E_{cell} = E_{RP}$ anode $+ E_{RP}$ cathode
iv) $E_{cell} = E_{OP}$ anode $- E_{OP}$ cathode

a) (iii) and (i) b) (i) and (ii) c) (iii) and (iv) d) (ii) and (iv)