



## CHEMISTRY

### BOOKS - OMEGA PUBLICATION

### ELECTROCHEMISTRY

#### Question

1. What are electrochemical cells? Name the two types of electrochemical cells.



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2. What is salt bridge? give its functions.



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3. In an electrochemical process, a salt bridge is used:



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4. What should be the characteristics of the electrolyte used in salt bridge?



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5. The function of a salt bridge is to :



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6. The cathode in a galvanic cell and electrolytic cell is

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7. What do you understand by electrode potential?

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8. Discuss the following terms :

Oxidation potential

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9. Discuss the following terms :

Reduction potential



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10. Write the IUPAC name of  $\text{CH}_3\text{CH}_2\text{CHNO}_2\text{CH}(\text{CH}_3)_2$



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11. What is electromotive force of a cell?



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12. Distinguish between emf and potential difference.



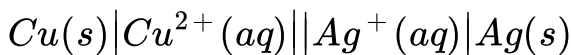
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13. What is e.m.f. of the cell, when the cell reaction attains equilibrium ?



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14. A cell is set up between copper and silver as follows :



If two half cells work under standard conditions, calculate the emf of the cell.

$$\text{Given } E_{Cu^{2+} | Cu}^{\circ} = 0.34V, E_{Ag^+ / Ag}^{\circ} = 0.80V$$



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15. Arrange the following metals in the order in which they displace each other from the solution of their salts. Al, Cu, Fe,

Mg and Zn.



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16. Depict the galvanic cell in which the reaction  $Zn(s) + 2Ag^+(aq) \rightarrow Zn^{2+}(aq) + 2Ag(s)$  takes place.

Further show: The carriers of the current in the cell.



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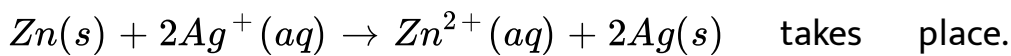
17. Depict the galvanic cell in which the reaction  $Zn(s) + 2Ag^+(aq) \rightarrow Zn^{2+}(aq) + 2Ag(s)$  takes place.

Further show: The carriers of the current in the cell.



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18. Depict the galvanic cell in which the reaction



Further show: Individual reaction at each electrode.

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19.  $\text{Mg}(s) + 2\text{Ag}^+(1M) \rightarrow \text{Mg}^{+2}(1M) + 2\text{Ag}(s)$  Write cell representation for above reaction.

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20. Given the standard electrode potentials:  $\frac{K^+}{K} = -2.93V$ .

' $\text{Ag}^+/\text{Ag}=0.80V$ ', Arrange these metals in their increasing order of reducing power.

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**21.** Describe the construction of standard hydrogen electrode.



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**22.** Why is it not possible to measure the single electrode potential?



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**23.** Define electrochemical series and give one application of it.



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**24.** How is the electro-chemical series helpful in determining whether a metal can displace hydrogen from acid or not ?

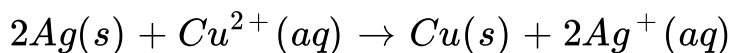


Explain.



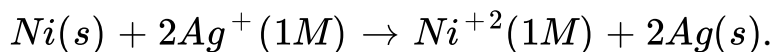
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25. Explain whether following reaction is feasible or not :



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26. For the reaction :



Which species get reduced?



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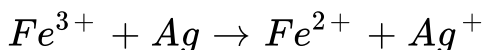
27. Can you store silver ions solution in copper vessel ? Why or why not ?

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28. Can you store copper sulphate solutions in a zinc pot?

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29.  $E^\circ$  values for  $Fe^{3+} / Fe^{2+}$  and  $Ag^+ / Ag$  are 0.771 V and 0.8 respectively. Is the reaction,



Spontaneous or not ? Give reason also.

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30. What is Nernst's equation? Write the mathematical relation.

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31. Write Nernst equation and calculate e.m.f. of the cell at 298 k.



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32. Zinc rod is dipped in 0.1 M solution of ZnSO<sub>4</sub>. The salt is 95% dissociated at this dilution at 298 K. Calculate the electrode potential. [Given  $E_{Zn^{2+}/Zn} = +(-0.76 \text{ V})$ ]

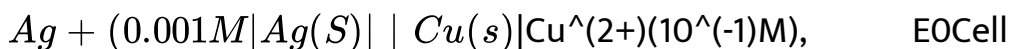
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33. Derive Nernst equation for the following cell:



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34. Calculate the emf of the following cell at  $25^{\circ}C$  :

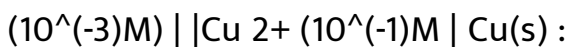


$$= 0.46V$$



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35. Calculate the emf of the following cell at  $25^{\circ}C$   $Ag(s) | Ag^{+}$



$$\text{Given } E_{cell}^{\circ} = + 0.46V \text{ and } \log 10^n = n.$$

A.  $\text{Ag(s)} \mid \text{Ag}^+ (10^{-3}\text{M}) \mid \mid \text{Cu}^{2+} (10^{-1}\text{M}) \mid \text{Cu(s)}$

B.

C.

D.

**Answer:**



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**36.** Derive equilibrium constant from Nernst equation.

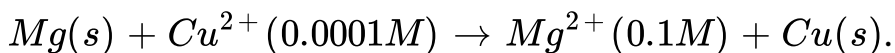


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**37.** How is equilibrium constant calculated from the Nernst's equation ? Derive the relation using suitable example.

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**38.** Represent the cell in which the following reaction takes place:



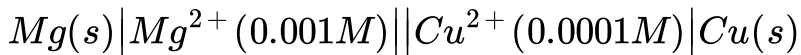
Calculate its  $E$ , if  $E^\circ$  is  $2.71V$ .

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**39.** Calculate the potential of hydrogen electrode in a solution whose pH is 10.

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40. Write Nernst equation and calculate e.m.f. of the cell at 298 k.



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41. Write the IUPAC Name of CH<sub>3</sub>CH<sub>2</sub>COCL



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42. Calculate  $\Delta G^\circ$  and equilibrium constant for the cell reaction,



Given that:  $E^\circ (Cl_2, Cl^-) = 1.36V$ ,  $E^\circ (I_2, I^-) = 0.536V$



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**43.** For the cell  $Mg|Mg^{2+}||Ag^+|Ag$  calculate equilibrium constant at  $25^\circ C$  and also the maximum work that can be obtained from it.

$$E^\circ (Mg^{2+}, Mg) = -2 \cdot 37V \text{ and } E^\circ (Ag^+, Ag) = +0 \cdot 80V$$

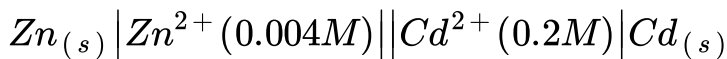
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**44.** The standard electrode potential for Daniell cell is 1. IV. Calculate the standard Gibbs energy for the reaction:  $Zn(s) + Cu^{(2+)}(aq) \rightarrow Zn^{(2+)}(aq) + Cu(s)$

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**45.** Calculate the cell e.m.f. and  $\Delta G$  for the cell reaction at  $25^\circ C$  for the cell:



$E^\circ$  values at  $25^\circ C$ ,  $Zn^{2+} / Zn = -0.763V$

$Cd^{+2} / Cd = -0.403V$

$F = 96,500$ ,  $R = 8.314JK^{-1}mole^{-1}$ .

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**46.** Calculate  $\Delta G$  and  $E_{cell}$  for the cell:

$Al / Al^{3+} (0.01M) || Fe^{2+} (0.02M) / Fe$  given that

$E^\circ (Al^{3+} / Al) = -1.66V$  and  $E^\circ (Fe^{2+} / Fe) = -0.44V$

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**47.** In the button cells widely used in watches and other devices the following reaction takes place:  $\text{Zn(s)} + \text{Ag}_2\text{O(s)} + \text{H}_2\text{O(l)} \rightarrow \text{Zn}^{2+}(\text{aq}) + 2\text{Ag(s)} + 2\text{OH}^-(\text{aq})$  Determine  $rG$  and  $E$  for the reaction.



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**48.** How many moles of mercury will be produced by electrolysing 1.0 M Hg ( $\text{NO}_3$ )<sub>2</sub> solution with a current of 2.00 A for 3 hours ?



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**49.** A voltaic cell is set up at  $24^\circ\text{C}$  with the following half-cells  $\text{Al}^{3+}(0.001\text{M})$  and  $\text{Ni}^{2+}(0.50\text{M})$ . Write an equation for the

reaction that occurs when the cell generates an electric current and determine the cell potential.

(Given :  $E_{Ni^{2+}/Ni}^{\circ} = -0.25V$ ,  $E_{Al^{3+}/Al}^{\circ} = -1.66V$ )

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50. Define metallic conductors ?

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51. What is resistance ? Also, discuss mathematical relation.

Write its units.

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**52.** Define conductance. Write its relation with resistance. Write its units.



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**53.** Define specific resistance and state its unit?



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**54.** Define Specific conductance.



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**55.** What is the effect of temperature on the electrical conductivity of metallic conductors ?



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**56.** The IUPAC Name of  $\text{CH}_3\text{CH}_2\text{CHClCH}_2\text{COOH}$



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**57.** Why does the conductivity of a solution decrease with dilution?



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**58.** Write two difference between conductance and conductivity.



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**59.** What is cell constant? Give its units..

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**60.** What is molar conductance ? Also write the mathematical relation and its units.

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**61.** Unit of equivalent conductance is:

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**62.** Write the mathematical relation for equivalent conductance.



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63. The conductivity of  $0.20\text{M KCl}$  solution at  $298\text{ K}$  is  $0.0248\text{ S cm}^{-1}$ . Calculate its molar conductivity.



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64. The electrical resistance of a column of  $0.05\text{ mol L}^{-1}$   $\text{NaOH}$  solution of diameter  $1\text{ cm}$  and length  $50\text{ cm}$  is  $5.55 \times 10^3\text{ ohm}$ . Calculate its resistivity, conductivity and molar conductivity.



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65. Conductivity of  $0.00241\text{ M}$  acetic acid is  $7.896 \times 10^{-5}\text{ S cm}^{-1}$ . Calculate its molar conductivity. If  $\Lambda_m^\circ$  for acetic acid

is  $390.5 \text{ S cm}^2 \text{ mol}^{-1}$ , what is its dissociation constant?



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**66.** A 0.05 M NaOH solution offered a resistance of 31.6 ohm in a conductivity cell at 298 K. if the area of the plates of the conductivity cell is  $3.8 \text{ cm}^2$  and distance between them 1.4 cm. calculate the molar conductivity of the NaOH solution.



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**67.** The resistance of a conductivity cell containing 0.001M KCl solution at 298 K is 1500 . What is the cell constant if conductivity of 0.001M KCl solution at 298 K is  $0.146 \times 10^{-3} \text{ S cm}^{-1}$ .



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**68.** The resistance of a 0.5 M solution of an electrolyte in a conductivity cell was found to be 25 ohm. Calculate the molar conductivity of the solution, if the electrodes in the cell are 1.6 cm apart and have an area of  $3 \cdot 2\text{cm}^2$ .



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**69.** A conductivity cell has its electrodes 1 cm apart and each electrode has area of cross-section  $2\text{ cm}^2$ , when filled with M/50 solution of sodium acetate, the cell shows a resistance of 166.5 ohms. Calculate the molar conductance of sodium acetate solution at the given concentration.



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70. A 0.05 M NaOH solution offered a resistance of 31.6 ohm in a conductivity cell at 298 K. if the area of the plates of the conductivity cell is  $3.8 \text{ cm}^2$  and distance between them 1.4 cm. calculate the molar conductivity of the NaOH solution.

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71. What is a strong electrolyte?

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72. Define conductivity and molar conductivity for the solution of an electrolyte. How do they vary when the concentration of electrolyte in the solution increases ?

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**73.** Explain the variation of conductivity of a metallic conductor with temperature?

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**74.** Explain the variation in molar conductivity of weak electrolyte with concentration.

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**75.** What are weak electrolytes ? Give examples.

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76. What is the effect of decreasing concentration on molar conductivity of weak electrolyte ?

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77. The molar conductance of NaCl solution at different concentration at 298K are given below :

$C(\text{molL}^{-1})$        $\Lambda_m (\text{Scm}^2\text{mol}^{-1})$

0.001              123.7

0.010             118.5

0.020             115.75

0.050             111.06

Plot a graph between  $\Lambda_m$  and  $C^{1/2}$  and determine the value of  $\Lambda^\circ m$  from it.

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**78.** Define degree of ionisation. Write mathematical relation for it.

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**79.** State and explain Kohlrausch's law. How would you determine the molar conductance of a weak electrolyte at infinite dilution?

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**80.** What are the applications of Kohlrausch's law ?

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81. The  $\lambda^\circ$  values of  $KNO_3$  and  $LiNO_3$  are 145.0 and 110.1  $S\ cm^2\ mol^{-1}$  respectively. The  $\lambda^\circ$  value of  $K^+$  ion is 73.5  $S\ cm^2\ mol^{-1}$ . Calculate  $\lambda^\circ(Li^+)$ .



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82. What is an electrolytic cell ?



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83. State Faraday's first law of electrolysis.



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84. what is electrolysis?



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**85.** Predict the products of electrolysis in each of the following:

An aqueous solution of  $AgNO_3$  with silver electrodes.



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**86.** Predict the products of electrolysis in each of the following:

An aqueous solution of  $AgNO_3$  with silver electrodes.



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**87.** Predict the products of electrolysis in each of the following:

An aqueous solution of  $AgNO_3$  with platinum electrodes.



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**88.** Predict the products of electrolysis in each of the following:

A dilute solution of  $H_2SO_4$  with platinum electrodes.

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**89.** Predict the products of electrolysis in each of the following:

An aqueous solution of  $CuCl_2$  with platinum electrodes.

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**90.** Predict and explain the products of electrolysis of molten

NaCl using platinum electrodes.

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91. State Faraday's first law of electrolysis.

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92. How much charge is required for the following reductions: 1 mol of  $\text{Al}^{(3+)}$  to  $\text{Al}$ ?

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93. How much charge is required for the following reductions: 1 mol of  $\text{Cu}^{2+} \rightarrow \text{Cu}$ ?

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**94.** How much charge is required for the following reductions:

1 mol of  $MnO_4^-$  to  $Mn^{(2+)}$ ?



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**95.** Calculate number of proton , neutron and electron in element potassium with atomic number 19 and mass number

39.



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**96.** Describe the electrolytic process for manufacture of chlorine.



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97. How many coulombs are required for the reduction of one mole of aluminium ?



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98. How much electricity in terms of Faraday is required to produce :20.0 g of Ca from molten  $CaCl_2$ ?



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99. How much electricity in terms of Faraday is required to produce : 40.0 g of Al from molten  $Al_2O_3$ ?



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**100.** Three conductivity cells A, B and C containing solutions of zinc sulphate, silver nitrate and copper sulphate respectively are connected in series. A steady current of 1.5 amperes is passed through them until 1.45 g of silver is deposited at the cathode of cell B. How long did the current flow ? What mass of copper and what mass of zinc got deposited in their respective cells ? (Atomic mass : Zn = 65.4 u, Ag = 108 u, Cu = 63.5 u)



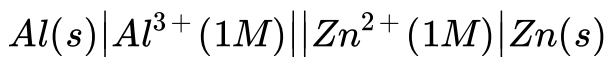
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**101.** Write four differences between metallic conductors and electrolytic conductors.



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**102.** Write each half cell reaction of the following electrochemical cell:



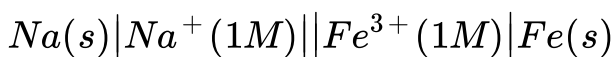
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**103.** Write four differences between galvanic (or electrochemical) cell and electrolytic cell.



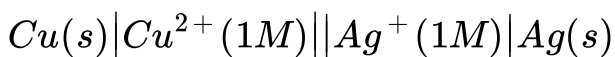
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**104.** Write each half cell reaction of the following electrochemical cell:



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105. Write each half cell reaction of the following electrochemical cell:



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106. Define battery.



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107. What are primary cells ? Give two examples.



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**108.** Write short note on dry cell.

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**109.** Calculate the number of electron, proton and neutron in sulphide ion ( $S^{*-2}$ )

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**110.** Calculate the frequency and wavelength of photon with energy  $5 ( 10^{*-8} )$ J.

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**111.** Write short note on lead storage battery.



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**112.** Explain the working of nickel-cadmium storage cell.



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**113.** An element with symbol Fe having mass number 56 and atomic number 26. Calculate the number of proton , neutron and electron.



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**114.** What are primary and secondary cell? How do they differ from each other?



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115. What are fuel cells ? Give example.

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116. What are fuel cells ? Discuss  $H_2 - O_2$  fuel cell. List some advantages of fuel cells over other cells.

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117. What are fuel cells ? Discuss  $H_2 - O_2$  fuel cell. List some advantages of fuel cells over other cells.

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**118.** What is corrosion?

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**119.** The chemical formula of rust is:

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**120.** Calculate the number of electron, proton and neutron in aluminium ion ( $\text{Al}^{3+}$ )

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**121.** Explain the mechanism of rusting.

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**122.** State reasons for the following, "Rusting of iron is said to be an electrochemical phenomenon."

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**123.** Discuss the electrochemical theory of corrosion.

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**124.** An element with symbol  $Zn^{2+}$  having mass number 64 and atomic number 30. Calculate number of protons, electrons and neutrons.

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125. An element with symbol Cl-having mass number 35 and number of neutron and electron 18. calculate atomic number and number of proton.

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126. Name the metal used in galvanisation of iron?

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127. What is galvanisation?

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Multiple Choice Question

1. Strong electrolytes are those which:

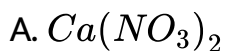
- A. dissolve readily in water
- B. conduct electricity
- C. dissociate into ions at high dilution
- D. completely dissociate into ions at all dilutions.

**Answer: D**



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2. Which of the following is a strong electrolyte?



B. HCN

C.  $CH_3COOH$

D.  $NH_4OH$

**Answer: A**



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3. Which of the following is a poor conductor of electricity?

A.  $CH_3COONa$

B.  $C_2H_5OH$

C.  $NaCl$

D. KOH

**Answer: B**



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4. Electrolysis involves oxidation and reduction respectively at

- A. anode and cathode
- B. cathode and anode
- C. at both the electrodes
- D. none of the above

**Answer: A**



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5. At anode in the electrolysis of fused sodium chloride

- A.  $Na^+$  is oxidised

B.  $Cl^-$  is oxidised

C. Cl is reduced

D. Na is reduced

**Answer: B**



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6. An element with symbol Ar having number of proton 18 and number of neutron 22. Calculate the mass number , atomic number and number of electron.



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7. The cathode in a galvanic cell and electrolytic cell is



- A. negatively charged in both cases
- B. positively charged in both cases
- C. positively charged in galvanic cell but negatively charged in an electrolytic cell
- D. negatively charged in a galvanic cell but positively charged in an electrolytic cell

**Answer: C**



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**8.** During the electrolysis of NaCl solution, the gas liberated at the anode is

A.  $H_2$

B.  $O_2$

C.  $Cl_2$

D.  $Na$

**Answer: C**



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**9.** What are the products of the electrolysis of molten sodium chloride?



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**10.** Use of electrolysis is in:

A. electrorefining

B. electroplating

C. both A and B

D. none of these

**Answer: C**



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**11.** In the electrolysis of NaCl

A.  $Cl^-$  is oxidised at anode

B.  $Cl^-$  is reduced at anode

C.  $Cl^-$  is oxidised at cathode

D.  $Cl^-$  is neither reduced nor oxidised.

**Answer: A**



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12. Electrolytic conduction differs from metallic conduction in the fact that in the case of electrolytic conduction

- A. the resistance increases with increasing temperature
- B. the resistance decreases with increasing temperature
- C. the flow of current does not generate heat
- D. the resistance is independent of the length of the conductor

**Answer: B**



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13. In a galvanic cell,

- A. chemical energy is converted into electricity
- B. chemical energy is converted into heat
- C. electrical energy is converted into heat
- D. electrical energy is converted into chemical energy

**Answer: A**



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14. The amount of ion discharged during electrolysis is not directly proportional to

- A. resistance

B. time

C. current

D. chemical equivalent

**Answer: A**



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15. What is the symbol of the species with the number of electrons equal to 36 , protons equal to 35 and neutrons equal to 45?



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16. When the same quantity of electricity is passed through the solutions of different electrolytes in series, the amounts of products obtained are proportional to their

- A. atomic weights
- B. chemical equivalent
- C. gram molecular volumes
- D. gram atomic ions

**Answer: B**



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17. Faraday's laws of electrolysis are related to

- A. atomic number of the cation

B. atomic number of anion

C. equivalent weight of the electrolyte

D. speed of the cation

**Answer: C**



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**18.** Give the general representation of the symbol of the element X is (  $Z$  = atomic number ,  $A$  = mass number )



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**19.** Find the number of neutrons in deuterium .



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20. The unit of specific conductance is:  $ohm$ ,  $ohm^{-1}cm^{-1}$

$ohm^{-1}cm$   $ohm^2$

A. ohms  $cm^{-1}$

B.  $ohms^{-1}cm^{-1}$

C. ohms  $cm^{-2}$

D.  $ohms^{-1}cm$

**Answer: B**



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21. The conductivity of a strong electrolyte:

A. increases on dilution slightly

B. does not change on dilution

C. decreases on dilution

D. depends on density of electrolyte itself

**Answer: A**



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**22.** K, Ca and Li metals may be arranged in the decreasing order of their standard electrode potentials as

A. K, Ca, Li

B. Li, K, Ca

C. Li, Ca, K

D. Ca, K, Li

**Answer: D**



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**23.** The units of conductivity are

A.  $ohm^{-1}$

B.  $ohm^{-1}cm^{-1}$

C.  $ohm^{-2}cm^2 equiv^{-1}$

D.  $ohm^{-1}cm^2$

**Answer: B**



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24. For a redox reaction to proceed in a cell, the e.m.f. must be:

- A. positive
- B. negative
- C. fixed
- D. zero

**Answer: A**



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25. The standard EMF of Daniel cell is 1.10V. The maximum electrical work obtained from the cell is [ $Fn = 2$ ]:

- A. 175.4 kJ

B. 212.3 kJ

C. 106.15 kJ

D. 53.07 kJ

**Answer: B**



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**26.** The electrode potential of SHE is fixed as

A. 0.34 V

B.  $-0.44V$

C. zero

D.  $-0.76V$

**Answer: C**



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27. Copper sulphate solution cannot be stored in a vessel made up of: Zinc, Glass, Copper, Plastic.

- A. zinc
- B. Glass
- C. Copper
- D. Plastic

**Answer: A**



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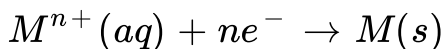
28. Which of the following statements is false?

- A. Oxidation and reduction half reactions occur at electrodes in electrochemical cells
- B. All voltaic (galvanic) cell involve the use of electricity to initiate non-spontaneous chemical reactions.
- C. Reduction occurs at the cathode
- D. Oxidation occurs at the anode

**Answer: B**

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**29.** for the electrode reaction,



Nernst equation is: 
$$E = E^{\circ} + \frac{RT}{nF} \ln \frac{1}{[M^{n+}]},$$

$$E = E^\circ + RT \ln[M^{n+}],$$

$$E = E^\circ + \frac{RT}{nF} \ln[M^{n+}],$$

$$\frac{E}{E^\circ} = \frac{RT}{nF} \ln[M^{n+}].$$

A.  $E = E^\circ + \frac{RT}{nF} \log \frac{1}{[M^{n+}]}$

B.  $E^\circ = E^\circ + RT \ln[M^{n+}]$

C.  $E = E^\circ + \frac{RT}{nF} \ln[M^{n+}]$

D.  $\frac{E}{E^\circ} = \frac{RT}{nF} \ln[M^{n+}]$

**Answer: A**



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**30.** The tendencies of the electrodes made up of Cu, Zn and Ag to release electrons, when dipped in their respective salt solutions decreases in the order:  $Zn > Ag > Cu$ ,  $Cu > Zn > Ag$ ,  $Zn > Cu > Ag$ ,  $Ag > Cu > Zn$ .



A.  $Zn > Ag > Cu$

B.  $Cu > Zn > Ag$

C.  $Zn > Cu > Ag$

D.  $Ag > Cu > Zn$

**Answer: C**



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**31. Strong electrolytes are those which:**

A. dissolve readily in water

B. conduct electricity

C. dissociate into ions at high dilution

D. completely dissociate into ions at all dilutions.

**Answer: D**



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**32.** Electrolysis involves oxidation and reduction respectively at

- A. anode and cathode
- B. cathode and anode
- C. at both the electrodes
- D. none of the above

**Answer: A**



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**33.** The cathode in a galvanic cell and electrolytic cell is

- A. negatively charged in both cases
- B. positively charged in both cases
- C. positively charged in galvanic cell but negatively charged in an electrolytic cell
- D. negatively charged in a galvanic cell but positively charged in an electrolytic cell

**Answer: C**



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**34.** During the electrolysis of NaCl solution, the gas liberated at the anode is



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**35.** In a galvanic cell,

- A. chemical energy is converted into electricity
- B. chemical energy is converted into heat
- C. electrical energy is converted into heat
- D. electrical energy is converted into chemical energy

**Answer: A**



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**36.** Law of electrolysis was given by

- A. Lamarck

B. Ostwald

C. Faraday

D. Arrhenius

**Answer: C**



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**37.** Faraday's laws of electrolysis are related to

A. atomic number of the cation

B. atomic number of anion

C. equivalent weight of the electrolyte

D. speed of the cation

**Answer: C**



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38. The units of conductivity are

A.  $ohm^{-1}$

B.  $ohm^{-1}cm^{-1}$

C.  $ohm^{-2}cm^2 equiv^{-1}$

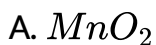
D.  $ohm^{-1}cm^2$

Answer: B



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39. In a dry cell the depolarizer is :



B.  $Zn$

C. Charcoal powder

D.  $NH_4Cl$

**Answer: D**



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40. The units of cell constant are:  $ohm^{-1}cm^{-1}$ ,  $cm$ ,  
 $ohm^{-1}cm$ ,  $cm^{-1}$

A.  $ohm^{-1}cm^{-1}$

B.  $cm$

C.  $ohm^{-1}cm$

D.  $cm^{-1}$

**Answer: D**



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**41. Unit of equivalent conductance is:**

A.  $ohm^{-1}cm^{-1}$

B.  $Ohm^{-1}cm^{-2}$

C.  $Ohm^{-1}cm^2$

D.  $Ohm^{-1}cm^2$  (g.eq.)

**Answer: D**



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42. In an electrochemical cell,

- A. potential energy decreases
- B. kinetic energy decreases
- C. potential energy changes into electrical energy
- D. chemical energy changes into electrical energy

**Answer: D**



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43. The units of cell constant are:  $\text{ohm}^{-1}\text{cm}^{-1}$ ,  $\text{cm}$ ,  
 $\text{ohm}^{-1}\text{cm}$ ,  $\text{cm}^{-1}$

A.  $\text{ohm}^{-1}\text{cm}^{-1}$

B. cm

C.  $\text{ohm}^{-1}\text{cm}$

D.  $\text{cm}^{-1}$

**Answer: D**



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44. The unit of specific conductance is:  $\text{ohm}$ ,  $\text{ohm}^{-1}\text{cm}^{-1}$

$\text{ohm}^{-1}\text{cm}$   $\text{ohm}^2$

A. Ohm

B.  $\text{Ohm}^{-1}\text{cm}^{-1}$

C.  $\text{Ohm}^{-1}\text{cm}$

D.  $\text{Ohm}^2$

**Answer: B**



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45. The units of cell constant are:  $\text{ohm}^{-1}\text{cm}^{-1}$ ,  $\text{cm}$ ,  $\text{ohm}^{-1}\text{cm}$ ,  $\text{cm}^{-1}$

A.  $\text{ohm}^{-1}\text{cm}^{-1}$

B.  $\text{cm}$

C.  $\text{Ohm}^{-1}\text{cm}$

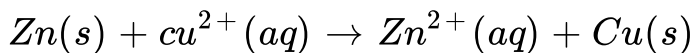
D.  $\text{cm}^{-1}$

**Answer: B**



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46. Consider the following reactions:



With reference to the above reaction which one of the following is correct statement:

- A. Zn is reduced to  $\text{Zn}^{+2}$
- B. Zn is oxidised to  $\text{Zn}^{+2}$  ions
- C.  $\text{Zn}^{+2}$  ions are oxidised to Zn
- D.  $\text{Cu}^{+2}$  ions are oxidised to Cu

**Answer: B**



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