



SHIKSHA CLASSES

Subject : Chemistry

BOARD QUESTION PAPER

Total Marks : 20

Class : XII

Topic : 5. Electrochemistry

Time : 1 Hr.

Section (A)

Q. 1 : Select and write the most appropriate answer from the following alternatives of each sub question. 5

- i) The SI unit of molar conductivity is
- a) $S\text{ cm}^2\text{ mol}^{-1}$ b) $S\text{ dm}^2\text{ mol}^{-1}$
c) $S\text{ m}^2$ d) $S\text{ m}^2\text{ mol}^{-1}$
- ii) The number of electrons that have a total charge of 965 coulomb is
- a) 6.022×10^{23} b) 6.022×10^{22}
c) 6.022×10^{21} d) 3.011×10^{23}
- iii) For Daniell Cell which is correct.
- a) Zn is anode b) Cu is anode
c) Ag is anode d) Fe is anode
- iv) Kohlrausch law used to determine molar conductivity at zero concentration of following electrolyte.
- a) NaCl b) CuSO_4
c) HCl d) CH_3COOH
- v) On diluting the solution of an electrolyte
- a) Both \wedge and k increase b) Both \wedge and k decrease
c) \wedge increases and k decreases d) \wedge decreases and k increases

Q. 2 : Very short answer type Question. 2

- i) What is sign of cathode and anode in galvanic cell?
ii) What is relation of molar conductivity with concentration?

Section (B)

: Answer the following questions. (Any Three) 6

Q. 3 : The molar conductivity of 0.05 M BaCl_2 Solution at 25°C is $223\ \Omega^{-1}\text{ cm}^2\text{ mol}^{-1}$.
What is its conductivity?

Q. 4 : How many faradays would be required to plate out 1.00 mole of free metal from following cations?

(i) Mg^{2+} (ii) Cu^+

Q. 5 : What is cell constant? What is its unit? Write its relation with resistance and conductivity.

Q. 6 : Differentiate between electrolytic Cell and Voltaic Cell.

Section (C)

: Answer the following question. (Any One) 3

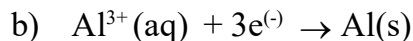
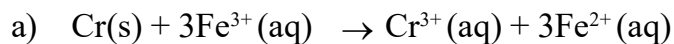
Q. 7 : Calculate mass of copper produced during passage of 2.5 A of current through a solution of CuSO_4 for 40 minutes molar mass of Cu is 63.5 g mol^{-1} ?

Q. 8 : Explain the electrolysis of molten NaCl

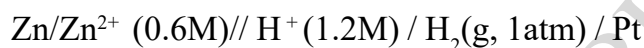
Section (D)

: Answer the following question. (Any One) 4

Q. 9 : i) Write Nernst equation for the following reactions

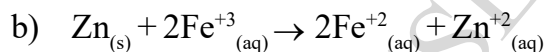
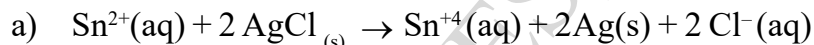


ii) Calculate potential of following cell at 25°C

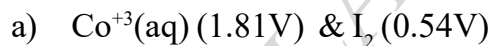


$E^{\circ}\text{Zn} = -0.763\text{V}$.

Q. 10 : i) Formulate a cell for each of the following reaction



ii) From the following pair predict which is better reducing agent, their standard potentials given in bracket. Give reason.



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