CHEMISTRY

JEE MAIN AND ADVANCED

Mock test 19

Example

1. Number of Faraday's required to generate one gram atom Cacl_2` is

A. 1

B. 2

C. 3

D. 4

Answer: B

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2. For the production of y L H_2 at STP at cathode, cost of electricity is x then cost of production of y LO_2 at STP at anode will be

A. x

B. $\frac{x}{2}$

C. 2x

D. 4x

Answer: C

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3. When one coulomb of electricity is passed through an electrolytic solution, the mass of the element deposited on the electrode is equal to

A. Molecular weight

B. equivalent weight

C. one gram

D. Electrochemical equivalent

Answer: D

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4. When a solution of $AgNO_3$ (0.5 M) is electrolyzed using platinum anode and cathode. Then the products obtained at two elctrodes are

A. Cu at anode ad Ag at cathode

B. o_2 at anode and Cu at cathode

C. o_2 at anode and Ag at cathode

D. NO_2 at anode and Ag at cathode

Answer: C

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5. Which of the following reaction is not involved in corrosion of iron?

A. $Fe(s) \rightarrow Fe^{2+}(aq) + 2e^-$

B. $4OH^-(aq) \rightarrow O_2(g) + 2H_2O(l) + 4e^-$

C.

$$4Fe^{2+}(aq) + O_2(g) + 4H_2o(l) \rightarrow 2Fe_2O_3(s) + 8H^+(aq)$$

D. $2Fe(s) + o_2(g) + 4H^+(aq) \rightarrow 2Fe^{2+}(aq) + 2H_2O(l)$

Answer: B

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6. During electrolysis of H_2SO_4(aq) with high charge density, $H_2S_2O_8$ is fromed as by product In such electrolysis 44.8 L $H_2(g)$ and 15L $O_2(g)$ liberated at STP Hence, the moles of $H_2S_2O_8$ formed is approximately equal to

A. 0.25

B. 0.66

C. 2

D. 2.68

Answer: B

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7. When a lead storage battery is discharged

Sulphuric acid is consumed

Water is formed

Lead sulphate is produced at both electrodes

SO_2 is evolved

The correct statement is/are

A. only 1

B. only 1 & 2

C. 1 , 2 , & 3

D. Only 4

Answer: C

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8. Three moles of electrons are passed through three solutions in succession containing $AgNO_3$, $CuSO_4$ and $AuCl_3$ respectively the molar ratio of amounts of cations reduced at cathode will be

A. $1:2:3$

B. $3:2:1$

C. $2:1:3$

D. $6:3:2$

Answer: D

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9. The Zn acts as sacrificial or cathodic protection to prevent rusting of iron because

A. E_(op) of Zn = E_(op) of Fe`

B. $E_{op}ofZn > E_{op}ofFe$

C. $E_{op}ofZn < E_{op}ofFe$

D. Zn dose mot react with water

Answer: B

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10. An aqueous solution of NaCL on electrolysis gives H_2(g), CL_2(g) and NaOH according to the equation `2Cl^(-)(aq)+2H_2O

A. 48.71 hr,1041M

B. 2880 min, 1041M

C. 17.54 hr, 2M

D. 170.54 min, 2M

Answer: A

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11. When an electric current is passed through a cell having an electrolyte, then the cations and anions move to their respective electrodes if the cathode is pulled out of the solution then

A. Both cations and anions will move towards anode

B. cations will start moving towards anode while anions will stop moving

C. Anions will continue to move towards anode while cations will stop moving

D. Both cations and anions will starts moving randomly

Answer: D

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12. Which of the following given batteries are rechargeable?

Dry-cell battery

Nickel-cadmium battery

Lithium battery

Fuel cell

Lead storage battery

A. 1,2 & 4

B. 2, 3 & 5

C. 1, 2, 4 & 5

D. 2, 4 & 5

Answer: B

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13. Electrolysis of 50 L aqueous solution of CH_3COONa was done by passing 2F of electricity the pH of the solution and the gaseous products obtained at anode and cathode are respectively

A. pH=12.6,$C_2\ H_6$(g)+CO_2(g) &H_2(g)

B. pH=2, $C_2\ H_6$(g)+CO_2(g) &H_2(g)

C. pH=6.0, CH_4(g)+CO_2(g) &H_2(g)

D. pH=13.5, CH_4(g)+CO_2(g) & O_2(g)

Answer: A

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14. When an acidified solution of Na_2MoO_n (atomic mass of Moi=36) is electrolyzed, O_2 gas is liberated corresponding to a

volume of 0.112 L at STP and mass of Mo deposited is 0.32 g. Then the formula of the salt and oxidation state of Mo is

A. Na_2MoO, 0

B. Na_2MoO_4,+6

C. Na_2MoO_2,+2

D. Na_2MoO_3,+4

Answer: B

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