

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 L O_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 electrodes are

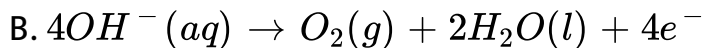
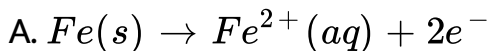
- A. Cu at anode and Ag at cathode
- B. O_2 at anode and Cu at cathode
- C. O_2 at anode and Ag at cathode
- D. NO_2 at anode and Ag at cathode

Answer: C

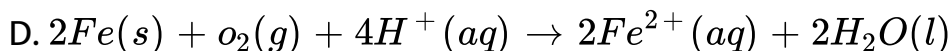
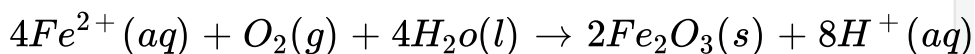


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5. Which of the following reaction is not involved in corrosion of iron?



C.



Answer: B



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6. During electrolysis of $H_2SO_4(aq)$ with high charge density, $H_2S_2O_8$ is formed as by product. In such electrolysis 44.8 L $H_2(g)$ and 15 L $O_2(g)$ are 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} of Zn > E_{op} of Fe

C. E_{op} of Zn < E_{op} of Fe

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 start 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, $C_2H_6(g) + CO_2(g)$ & $H_2(g)$

B. pH=2, $C_2H_6(g) + CO_2(g)$ & $H_2(g)$

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

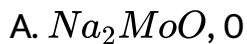


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14. When an acidified solution of Na_2MoO_n (atomic mass of Mo=36) is electrolyzed, O_2 gas is liberated corresponding to a

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



Answer: B



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