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UDUPI

CET25C2 ELECTROCHEMISTRY

Class 12 - Chemistry

Time Allowed: 1 hour and 30 minutes **Maximum Marks: 75**

1. Li occupies higher position in the electrochemical series of metals as compared to Cu since **[1]**

   a) Li is smaller in size as compared to Cu

   b) the standard oxidation potential of Li^+/Li is lower than that of Cu^{2+}/Cu

   c) the standard reduction potential of Li^+/Li is lower than that of Cu^{2+}/Cu

   d) the standard reduction potential of Cu^{2+}/Cu is lower than that of Li^+/Li

2. The number of faradays passed through a solution of $CuSO_4$ to produce 1 mol of Cu and O_2 will be: **[1]**

   a) 4.0

   b) 8.0

   c) 1.0

   d) 2.0

3. The difference between the electrode potentials of two electrodes when no current is drawn through the cell is called _____. **[1]**

   a) Cell voltage

   b) Cell potential

   c) Potential difference

   d) Cell emf

4. 96500 coulomb deposit 107.9 g of Ag from its solution. If $e = 1.6 \times 10^{-19}$ coulomb, calculate the number of electrons per mole of electrons. **[1]**

   a) 6.02×10^{23}

   b) 96500

   c) 1.6×10^{-19}

   d) 6.02×10^{-23}

5. In a lead storage battery: **[1]**

   a) All of these

   b) PbO_2 is reduced to $PbSO_4$ at the cathode.

   c) Pb is oxidised to $PbSO_4$ at the anode.

   d) Both electrodes are immersed in the same aqueous solution of H_2SO_4.

6. In a typical fuel cell, the reactant (R) and product (P) are _____. **[1]**

   a) R = $H_{2(g)}$, $O_{2(g)}$: P = $H_2O(l)$

   b) R = $H_{2(g)}$, $N_{2(g)}$: P = $NH_{3(aq)}$

   c) R = $H_{2(g)}$, $O_{2(g)}$: P = $H_2O_2(l)$

   d) R = $H_{2(g)}$, $O_{2(g)}$, $Cl_{2(g)}$: P = $HClO_{4(aq)}$

7. The conductivity of 0.20 M solution of KCl at 298 K is 0.0248 S cm^{-1}. Calculate its molar conductivity. **[1]**

   a) 124.0 S cm^2mol^{-1}

   b) 129.0 S cm^2mol^{-1}

   c) 122.0 S cm^2mol^{-1}

   d) 120.0 S cm^2mol^{-1}

8. In a reaction, the initial concentration of the reactants increases four fold and the rate becomes sixteen times its **[1]**

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initial value. The order of the reaction is:

a) 2.0 b) 2.5

c) 3.5 d) 1.5

9. A galvanic cell can behave as an electrolytic cell when: **[1]**

a) $E_{cell} > E_{ext}$ b) $E_{cell} = E_{ext}$

c) $E_{ext} > E_{cell}$ d) $E_{cell} = 0$

10. For a cell reaction involving two electrons change, the standard e.m.f. of the cell is found to be 0.295 V at .The equilibrium constant of the reaction at 25°C is **[1]**

a) 1×10^{-20} b) 10

c) 1×10^{10} d) 2.95×10^{2}

11. Solutions of two electrolytes X and Y are diluted. Molar conductivity of X increases 25 times whereas that of Y increases 1.5 times. Which one is a stronger electrolyte? **[1]**

a) X b) None of the above

c) Both X and Y d) Y

12. The correct cell to represent the following reaction is: **[1]**

$Zn + 2Ag^+ \rightarrow Zn^{2+} + 2Ag$

a) $2Ag \mid Ag^+ \parallel Zn \mid Zn^{2+}$ b) $Zn \mid Zn^{2+} \parallel Ag^+ \mid Ag$

c) $Ag \mid Ag^+ \parallel Zn \mid Zn^{2+}$ d) $Ag^+ \mid Ag \parallel Zn^{2+} \mid Zn$

13. The e.m.f of the cell in which the reaction: **[1]**

$2Ag^+(aq) + H_2(g) \rightarrow 2Ag(s) + 2H^+(aq)$

Occurs is 0.80 V. The standard reduction potential of Ag^+/Ag electrode is:

a) 0.40 V b) - 0.80 V

c) 0.80 V d) - 0.40 V

14. The quantity of charge required to obtain one mole of aluminium from Al_2O_3 is _____. **[1]**

a) 2F b) 3F

c) 1F d) 6F

15. The e.m.f of the cell in which the reaction: **[1]**

$2Ag^+$ (aq) + H_2(g)$\rightarrow$ 2Ag(s) + $2H^+$(aq)

Occurs is 0.80 V. The standard reduction potential of Ag^+ / Ag electrode is:

a) -0.80 V b) -0.40 V

c) 0.80 V d) 0.40 V

16. Use the data given below and find out the most stable oxidised species. **[1]**

$E^{\ominus}_{Cr_2O_7^{2-}/Cr^{3+}}$ = 1.33V

$E^{\ominus}_{Cl_2/Cl^-}$ = 1.36 V

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$E^{\ominus}_{MnO_4^-/Mn^{2+}}$ = 1.51 V

$E^{\ominus}_{Cr^{3+}/Cr}$ = -0.74 V

a) Cr^{3+} b) Mn^{2+}

c) MnO_4^- d) $Cr_2O_7^{2-}$

17. Consider the following standard electrode potential values: **[1]**

$Sn^{2+}_{(aq)} + 2e^- \rightarrow Sn_{(s)} \quad E^\circ = -0.14\ V$

$Fe^{3+}_{(aq)} + e^- \rightarrow Fe^{2+}{}_{(aq)} \quad E^\circ = +0.77\ V$

What is the cell reaction and potential for the spontaneous reaction that occurs?

a) $2Fe^{2+}_{(aq)} + Sn^{2+}_{(aq)} \rightarrow 2Fe^{3+}_{(aq)} + Sn_{(s)} E^\circ = -0.91\ V$ b) $2Fe^{3+}_{(aq)} + Sn_{(s)} \rightarrow 2Fe^{2+}_{(aq)} + Sn^{2+}_{(aq)} E^\circ = +1.68\ V$

c) $2Fe^{2+}{}_{(aq)} + Sn^{2+}{}_{(aq)} \rightarrow 2Fe^{3+}{}_{(aq)} + Sn_{(s)} E^\circ = +0.91\ V$ d) $2Fe^{3+}_{(aq)} + Sn_{(s)} \rightarrow 2Fe^{2+}_{(aq)} + Sn^{2+}_{(aq)} E^\circ = +0.91\ V$

18. Use the data given below and find out the most stable ion in its reduced form **[1]**

$E^{\ominus}_{Cr_2O_7^{2-}/Cr^{3+}} = 1.33V$

$E^{\ominus}_{Cl_2/Cl^-} = 1.36V$

$E^{\ominus}_{MnO_4^-/Mn^{2+}} = 1.51V$

$E^{\ominus}_{Cr^{3+}/Cr} = -0.74V$

a) Cr b) Cl^-

c) Cr^{3+} d) Mn^{2+}

19. Corrosion of iron is: **[1]**

a) a decomposition process b) a reduction process

c) an electrochemical process d) a photochemical process

20. In fuel cell **[1]**

a) chemical energy is converted to electrical energy. b) energy of combustion of fuel is converted to electrical energy.

c) energy of combustion of fuel is converted to chemical energy. d) electrical energy is converted to chemical energy.

21. Which of the following is affected by catalyst? **[1]**

a) E_a b) ΔG

c) ΔH d) ΔS

22. On the basis of the following E° values, the strongest oxidizing agent is: **[1]**

$[Fe(CN)_6]^{4-} \rightarrow [Fe(CN)_6]^{3-} + e^{-1}$;

E^0 = -0.35V

$Fe^{2+} \rightarrow Fe^{3+} + e^{-1}$, E^0 = -0.77V

a) $[Fe(CN)_6]^{4-}$ b) $[Fe(CN)_6]^{3-}$

c) Fe^{2+} d) Fe^{3+}

23. When $KMnO_4$ acts as an oxidizing agent and ultimately forms, MnO_4^{2-} MnO_2, Mn_2O_3 and Mn^{2+}, then the **[1]**

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number of electrons transferred in each case

a) 1, 5, 3, 7 b) 4, 3, 1, 5

c) 1, 3, 4, 5 d) 3, 5, 7, 1

24. Which of the following solutions of KCl will have the highest value of specific conductance? **[1]**

a) 0.1 M b) 0.01 M

c) 1.0 M d) 0.5 M

25. Calculate the emf of the cell **[1]**

Fe(s) | Fe^{2+}(0.001M) || H^+(1M) | H_2(g) (1bar) | Pt(s)

at 298 K is --- [given E^0Fe^{2+}/Fe = -0.44V]]

a) 0.55 V b) 0.50 V

c) 0.53 V d) 0.48 V

26. The standard emf of galvanic cell involving 3 moles of electrons in its redox reaction is 0.59 V. The equilibrium constant for the reaction of the cell is **[1]**

a) 10^{25} b) 10^{30}

c) 10^{15} d) 10^{20}

27. $\Lambda^{\circ}_{m(NH_4OH)}$ is equal to _____. **[1]**

a) $\Lambda^0_{m^0(NaOH)}\Lambda^0_{m(NaCl)} - \Lambda^0_{[NH_4CI)}$ b) $\Lambda^0_m(NH_4Cl)^+\Lambda^0_{m(NaOH)} - \Lambda^0_{(NaCl)}$

c) $\Lambda^0_m(NH_4OH)^+\Lambda^0_m(NH_4C_1)^-\Lambda^0_{(HCI)}$ d) $\Lambda^0_m(NH_4Cl)^+\Lambda^0_{m(NaC)} - \Lambda^0_{(NaOH)}$

28. How much charge is required for the reduction of 1 mol of Al^{3+} to Al? **[1]**

a) 5F b) 6F

c) 3F d) 4F

29. In the button cells widely used in watches and other devices the following reaction takes place: **[1]**

$Zn_{(s)} + Ag_2O_{(s)} + H_2O_{(l)} \rightarrow Zn^{2+}_{(aq)} + 2Ag_{(s)} + 2OH^-_{(aq)}$ [Given E^0 Zn^{2+}/Zn = -0.76V, E^0Ag_2O/Ag = +0.344V]

Determine E^o cell for the reaction.

a) 1.104 V b) 1.005 V

c) 0.913 V d) 1.159 V

30. Four half reactions I to IV are shown below: **[1]**

I. $2Cl^- \rightarrow Cl_2 + 2e^-$

II. $4OH^- \rightarrow O_2 + 2H_2O + 2e^-$

III. $Na^+ + e^- \rightarrow Na$

IV. $2H^+ + 2e^- \rightarrow H_2$

Which two of these reactions are most likely to occur when concentrated brine is electrolysed?

a) I and IV b) II and III

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c) II and IV

d) I and III

31. Which of the following is correct for spontaneity of a cell? **[1]**

a) ΔG = +ve, E^o = -ve

b) ΔG = +ve, E^o = 0

c) ΔG = -ve, E^o = +ve

d) ΔG = -ve, E^o = 0

32. Consider the following cell reaction: **[1]**

$2Fe_{(s)} + O_2 + 4H^+(aq) \rightarrow 2Fe^{2+}(aq) + 2H_2O(l)$;

E^0 = 1.67V

At[Fe^{2+}] = 10^{-3}M, P(O_2) = 0.1atm

And pH = 3, the cell potential at 25°C is

a) 1.87 V

b) 1.77 V

c) 1.47 V

d) 1.57 V

33. Debye-Huckel Onsager equation for strong electrolytes: **[1]**

$\wedge = \wedge_0 - \mathrm{A}\sqrt{\mathrm{C}}$

Which of the following equality holds?

a) $\wedge = \wedge_0$ as $\mathrm{C} \longrightarrow 0$

b) When $\mathrm{C} \longrightarrow \infty$
Then $\wedge = \wedge_0$

c) $\wedge = \wedge_0$ as $\mathrm{C} \longrightarrow \sqrt{\mathrm{A}}$

d) $\wedge = \wedge_0$ as $\mathrm{C} \longrightarrow 1$

34. Using the data given in below find out in which option the order of reducing power is correct. **[1]**

$E^{\ominus}_{Cr_2O_7^{2-}/Cr^{3+}} = 1.33V$

$E^{\ominus}_{Cl_2/Cl^-} = 1.36V$

$E^{\ominus}_{MnO_4^-/Mn^{2+}} = 1.51V$

$E^{\ominus}_{Cr^{3+}/Cr} = -0.74V$

a) $Mn^{2+} < Cl^- < Cr^{3+} < Cr$

b) $Mn^{2+} < Cr^{3+} < Cl^- < Cr$

c) $Cr^{3+} < Cl^- < Mn^{2+} < Cr$

d) $Cr^{3+} < Cl^- < Cr_2O_7^{2-} < MnO_4^-$

35. Which cell will measure standard electrode potential of copper electrode? **[1]**

a) Pt(s) H_2 (g, 0.1 bar) H^+ (aq.,1 M) Cu^{2+} (aq.,1M) Cu

b) Pt(s) I H_2 (g, 1 bar) I H^+ (aq.,1 M) II Cu^{2+} (aq.,1 M) I Cu

c) Pt(s) H_2 (g, 1 bar) H^+ (aq.,1 M) Cu^{2+} (aq.,2 M) Cu

d) Pt(s) H_2 (g, 1 bar) H^+ (aq.,0.1 M) Cu^{2+} (aq.,1 M) Cu

36. How much charge is required for the reduction of 1 mol of MnO_4^- to Mn^{2+}? **[1]**

a) 6F

b) 5F

c) 4F

d) 3F

37. Calculate the standard cell potentials of galvanic cell, $\Delta_r G^o$ and equilibrium constant of the reactions if the reaction is **[1]**

$Fe^{2+}(aq) + Ag^+(aq) \rightarrow Fe^{3+}(aq) + Ag(s)$ $\left[\frac{E^0 Fe^{3+}}{Fe^{2+}} = 0.78V, \frac{E^0 Ag^+}{Ag} = 0.8V\right]$

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a) 0.04V, -2.955 kJ/mol, 3.2

b) 0.03V, -2.895 kJ/mol, 3.22

c) 0.01V, - 2.800 kJ/mol, 3.2

d) 0.02V, -2.850 kJ/mol, 3.2

38. $Zn \mid Zn^{2+}(a = 0.1M) \parallel Fe^{2+}(a = 0.01M) \mid Fe$ **[1]**

The emf of the above cell is 0.2905 V. Equilibrium constant for the cell reaction is

a) $10^{\frac{0.26}{0.0295}}$

b) $10^{\frac{0.32}{0.0295}}$

c) $e^{\frac{0.32}{0.295}}$

d) $10^{\frac{0.32}{0.0591}}$

39. Which of the following is a redox reaction? **[1]**

a) $Mg(OH)_2 + 2NH_4Cl \rightarrow MgCl2 + 2NH_4OH$

b) $CaC_2O_4 + 2HCl \rightarrow CaCl_2 + H_2C_2O_4$

c) $NaCl + KNO_3 \rightarrow NaNO_3 + KCl$

d) Zn + 2AgCN → 2Ag + Zn $(CN)_2$

40. A solution of $Ni(NO_3)_2$ is electrolyzed between platinum electrodes using a current of 5 amperes for 20 minutes. **[1]**

What mass of Ni is deposited at the cathode?(Given At mass of Ni = 58.69u)

a) 1.624g

b) 1.424g

c) 1.8245g

d) 1.224g

41. The standard electrode potential for the half cell reactions are **[1]**

$Zn^{++} + 2e^- \rightarrow Zn$, E^0 = -0.76V

$Fe^{++} + 2e^- \rightarrow Fe$, E^0 = -0.44V

The e.m.f. of the cell reaction $Fe^{++} + Zn \rightarrow Zn^{++} + Fe$ is

a) + 0.32 V

b) –0.32 V

c) +1.20 V

d) -1.20 V

42. The passage of electricity in the Daniell cell when Zn and Cu electrodes are connected: **[1]**

a) from Cu to Zn outside the cell

b) from Zn to Cu inside the cell

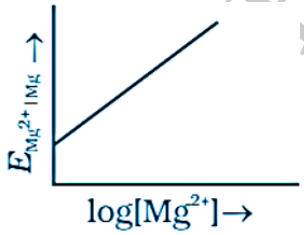
c) from Zn to Cu outside the cell

d) from Cu to Zn inside the cell

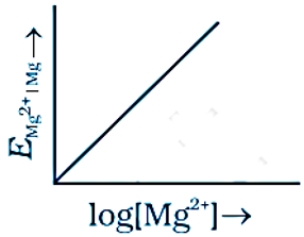
43. Electrode potential for Mg electrode varies according to the equation **[1]**

$E_{Mg^{2+}/Mg} = E^{\circ}_{Mg^{2+}|Mg} - \frac{0.059}{2}\log\frac{1}{[Mg^{2+}]}$. The graph of $E_{Mg^{2+}/Mg}$ vs log $[Mg^{2+}]$ is

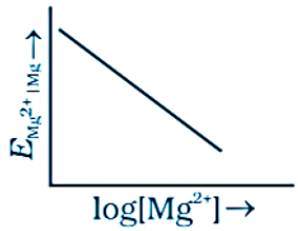
a)



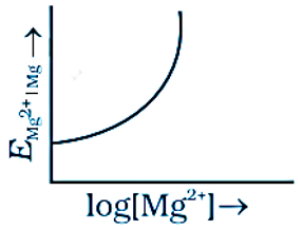
b)



c)



d)



44. The cell constant of a conductivity cell _____. **[1]**

a) changes with temperature of electrolyte

b) changes with change of electrolyte

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c) remains constant for a cell

d) changes with change of concentration of electrolyte

45. Calculate the emf of the following cell at 298 K: **[1]**

Mg(s) | Mg^{2+}(0.1M) || Cu^{2+}(1.0 $\times 10^{-3}$ M) | Cu(s)

[Given: $E^{\circ}_{Cell} = 2.71$ V]

a) 1.426 V

b) 1.8 V

c) 2.651 V

d) 2.503 V

46. The standard reduction potential E_o for half reactions are **[1]**

$E^0_{cell} = E^0_{cathode} - E^0_{anods}$

The EMF of the cell reaction Fe^{2+} + Zn = Zn^{2+} + Fe is--- [Given E^0Zn^{2+}/Zn = -0.76V; E^0Fe^{2+}/Fe = -0.44V]

a) -1.17 V

b) -0.32 V

c) + 0.32 V

d) +1.17 V

47. Resistance of 0.2 M solution of an electrolyte is 50Ω. The specific conductance of the solution is 1.3s m^{-1}. If resistance of the 0.4 M solution of the same electrolyte is 260Ω, its molar conductivity is **[1]**

a) $6.25 \times 10^{-4} S\, m^2 mol^{-1}$

b) $625 \times 10^{-4}\ S\, m^2 mol^{-1}$

c) $6250\ S\ m^2 mol^{-1}$

d) $62.5\ S\ m^2 mol^{-1}$

48. If the standard electrode potential of an electrode is greater than zero, then we can infer that its **[1]**

a) reduced form is more stable compared to hydrogen gas

b) reduced and oxidised forms are equally stable

c) reduced form is less stable than the hydrogen gas

d) oxidised form is more stable compared to hydrogen gas

49. Emf of the cell **[1]**

Mg(s)|Mg^{2+}(0.001M)||Cu^2 + (0.0001M)|Cu(s)

at 298 K is [Given $E^0 = \frac{Mg^{2+}}{Mg} = -2.37V$, $\frac{E^0Cu^{2+}}{Cu} = +0.34V$]

a) 2.50 V

b) 2.38 V

c) 2.60 V

d) 2.68 V

50. The standard reduction potential for Zn is -0.76 V. Which of the following statements is correct when Zn is placed in dilute acid solution? **[1]**

a) Zn is readily oxidized.

b) Zn cannot liberate hydrogen from acids.

c) Zn^{2+} is readily reduced.

d) Zn remains as it is.

51. The highest electrical conductivity of the following aqueous solutions is of **[1]**

a) 0.1 M acetic acid

b) 0.1 M chloroacetic acid

c) 0.1 M fluoroacetic acid

d) 0.1 M difluoroacetic acid

52. Which of the following electrolytic solutions has the least specific conductance? **[1]**

a) 0.002 N

b) 0.2 N

c) 0.02 N

d) 2 N

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53. What is the molar conductance at infinite dilution for sodium chloride if the molar conductance at infinite dilution of Na^+ and Cl^- ions are 51.12 $\times$ 10^{-4} S cm^2/mol and 73.54 $\times$ 10^{-4} Scm^2/mol respectively? **[1]**

a) 198.20 S cm^2/mol

b) 175.78 S cm^2/mol

c) 22.42 S cm^2/mol

d) 124.66 S cm^2/mol

54. The unit of molar conductivity is **[1]**

a) S cm^{-2} mol^{-1}

b) S cm^2 mol

c) S cm^2 mol^{-1}

d) S^{-1} cm^2 mol^{-1}

55. Hydrogen gas is not liberated when the following metal is added to dil. HCl. **[1]**

a) Ag

b) Zn

c) Mg

d) Sn

56. In the electrolysis of acidulated water, it is desired to obtain 1.12 cc of hydrogen per second under S.T.P. conditions. The current to be passed is **[1]**

a) 0.965 Amp

b) 9.65 Amp

c) 19.3 Amp

d) 1.93 Amp

57. Saturated solution of KNO_3 is used to make 'salt bridge' because **[1]**

a) KNO_3 is highly soluble in water

b) velocity of K^+ is greater than that of NO_3^-

c) velocity of NO_3^- is greater than that of K^+

d) velocity of both K^+ and NO_3^- are nearly the same.

58. The resistance of a conductivity cell containing 0.001M KCl solution at 298 K is 1500 Ω. What is the cell constant if conductivity of 0.001M KCl solution at 298 K is 0.146 × 10^{-3} S cm^{-1} **[1]**

a) 0.239 cm^{-1}

b) 0.209 cm^{-1}

c) 0.229 cm^{-1}

d) 0.219 cm^{-1}

59. The standard electrode potential is measured by **[1]**

a) Electrometer

b) Potentiometer

c) Galvanometer

d) Voltmeter

60. When a lead storage battery is discharged, then: **[1]**

a) lead is formed

b) SO_2 is evolved

c) lead sulphate is consumed

d) sulphuric acid is consumed

61. Electrolytic conduction is due to the movement of: **[1]**

a) molecules

b) atoms

c) ions

d) electrons

62. Choose the one which is a secondary cell: **[1]**

a) Leclanche cell

b) Both Laclanche cell and Mercury cell

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c) Mercury cell

d) Lead- storage battery cell

63. The one which decreases with dilution is **[1]**

a) molar conductance

b) conductance

c) specific conductance

d) equivalent conductance

64. The amount of electricity required to produce one mole of Zn from $ZnSO_4$ solution will be: **[1]**

a) 3F

b) 2F

c) 4F

d) 1F

65. Electrolysis of dilute aqueous NaCl solution was carried out by passing 10 milliampere current. The time required to liberate 0.01 mol of H_2 gas at the cathode is (1 Faraday = 96500 C mol^{-1}) **[1]**

a) $1.93 \times 10^4 s$

b) $19.3 \times 10^5 s$

c) $9.34 \times 10^4 s$

d) $1.93 \times 10^5 s$

66. The standard reduction potentials of Cu^{2+}/Cu and Cu^{2+}/Cu^{+} are +0.337 and +0.153 V respectively. The standard electrode potential of Cu^{+}/Cu half cell is: **[1]**

a) 0.490 V

b) 0.827 V

c) 0.184 V

d) 0.521 V

67. In a Leclanche dry cell, the cathode is **[1]**

a) Graphite rod

b) NH_4Cl

c) MnO_2

d) Zn container

68. ΔG and E°_{cell} for a spontaneous reaction will be: **[1]**

a) negative, positive

b) positive, positive

c) positive, negative

d) negative, negative

69. Which of the following cell was used in Apollo space programme? **[1]**

a) Daniel cell

b) Dry cell

c) H_2 - O_2 Fuel cell

d) Mercury cell

70. Rust is a mixture of : **[1]**

a) FeO and $Fe(OH)_3$

b) Fe_2O_3 and $Fe(OH)_3$

c) Fe_3O_4 and $Fe(OH)_3$

d) FeO and $Fe(OH)_2$

71. Aluminum displaces hydrogen from dilute HCl whereas silver does not. The E.M.F. of a cell prepared by combining Al/Al^{+3} and Ag/Ag+ is 2.46 V. The reduction potential of silver electrode is + 0.80 V. The reduction potential of aluminum electrode is: **[1]**

a) 3.26 V

b) -3.26 V

c) –1.66 V

d) + 1.66 V

72. The hydrogen electrode is dipped in a solution of pH 3 at 25°C. The potential would be (the value of 2.303 RT/F is 0.059 V) **[1]**

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a) 0.087 V

b) 0.059 V

c) -0.177 V

d) 0.177 V

73. Three electrolytic cells A,B,C containing solutions of $ZnSO_4$, $AgNO_3$ and $CuSO_4$, respectively are connected in series. A steady current of 1.5 amperes was passed through them until 1.45 g of silver deposited at the cathode of cell. How long did the current flow? What mass of copper and zinc were deposited? **[1]**

a) 823s, Copper 0.487g, Zinc 0.437 g

b) 863s, Copper 0.426g, Zinc 0.438 g

c) 763s, Copper 0.403g, Zinc 0.437 g

d) 800s, Copper 0.452g, Zinc 0.437g

74. How many coulombs are required for the oxidation of 1 mole of H_2O to O_2? **[1]**

a) $1.93 \times 10^5 C$

b) $4.824 \times 10^4 C$

c) $3.86 \times 10^5 C$

d) $9.65 \times 10^4 C$

75. Given **[1]**

i. $Cu^{2+} + 2e^- \rightarrow Cu$, $E^0 = 0.337$ V

ii. $Cu^{2+} + e^- \rightarrow Cu^+$, $E^0 = 0.153$ V

Electrode potential E° for the reaction $Cu^{2+} + e^- \rightarrow Cu$ will be

a) 0.52 V

b) 0.38 V

c) 0.30 V

d) 0.90 V

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