Chemistry Model Question Paper - 8

Question 1 :

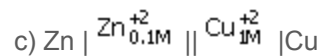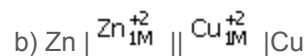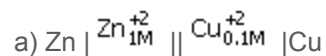During the formation of a chemical bond

(A) energy decreases

(B) energy increases

(C) energy of the system does not change

(D) electron-electron repulsion becomes more than the nucleus-electron attraction

Answer: (A)

Question 2 : E1, E2 and E3 are the emf values of the three galvanic cells respectively.

a) $Zn \mid Zn^{+2}_{1M} \parallel Cu^{+2}_{0.1M} \mid Cu$

b) $Zn \mid Zn^{+2}_{1M} \parallel Cu^{+2}_{1M} \mid Cu$

c) $Zn \mid Zn^{+2}_{0.1M} \parallel Cu^{+2}_{1M} \mid Cu$

Which one of the following is true?

(A) E3 > E2 > E1

(B) E2 > E3> E1

(C) E1 > E3> E2

(D) E1 > E2> E3

Answer: (A)

Question 3 :

Ellingham diagram represents a graph of

(A) DG Vs T

(B) DG_0 Vs T

(C) DS Vs P

(D) DG Vs P

Answer: (B)

Question 4 :

Enthalpy change for the reaction, $4H_{(g)} \rightarrow 2H_{2(g)}$ is –869.6 kJ. The dissociation energy of H – H

bond is

(A) +217.4 kJ

(B) –434.8 kJ

(C) –869.6 kJ

(D) +434.8 kJ

Answer: (D)

Question 5 : Enthalpy of vapourization of benzene is +35.3 kJ mol–1 at its boiling point of 80°C. The entropy change in the transition of the vapour to liquid at its boiling point

[in JK–1 mol–1] is _____.

(A) –100

(B) –441

(C) +100

(D) +441

Answer: (A)

Question 6 : Entropy of the universe is

(A) continuously increasing

(B) continuously decreasing

(C) zero

(D) constant

Answer: (A)

Question 7 :

Excess of carbon dioxide is passed through 50 ml of 0.5 M calcium hydroxide solution. After the

completion of the reaction, the solution was evaporated to dryness. The solid calcium carbonate

was completely neutralised with 0.1 N Hydrochloric acid. The volume of Hydrochloric acid required

is (At. mass of calcium = 40)

(A) 500 cm$_3$

(B) 400 cm$_3$

(C) 300 cm^3

(D) 200 cm^3

Answer: (A)

Question 8 : Excess of PCl$_5$ reacts with conc. H$_2$SO$_4$ giving

(A) chlorosulphonic acid

(B) thionyl chloride

(C) sulphuryl chloride

(D) sulphurous acid

Answer: (C)

Question 9 :

For a chemical reaction A → B, the rate of the reaction is 2×10^{-3} mol dm^{-3} s^{-1}, when the initial

concentration is 0.05 mol dm^{-3}. The rate of the same reaction is 1.6×10^{-2} mol dm^{-3} s^{-1} when the

initial concentration is 0.1 mol dm^{-3}. The order of the reaction is

(A) 3

(B) 1

(C) 2

(D) 0

Answer: (A)

Question 10 :

For a stable molecule the value of bond order must be

(A) negative

(B) positive

(C) zero

(D) there is no relationship between stability and bond order.

Answer: (B)