GOLDEN
SAMPLE QUESTIONS

CHEMISTRY For CBSE 2019
(Set 1)

(Q. 1 One Mark)

1.

   (a) Isotonic solutions and hypertonic solutions

   (b) Classify the following into different categories of crystalline solids : Urea , ammonia, tin, graphite, silicon carbide, potassium sulphate, water, argon

(Q. 2 Two Marks)

2.

   (a) What are effective collisions ?

   (b) Define half life period.

   (c) Define activation energy.

(Q. 3 Four Marks)

3.

   (a) Calculate the e.m.f. of the cell in which the following reaction takes place :
$Ni(s) + 2Ag^+(0.002 \text{ M}) \rightarrow Ni^{2+}(0.160 \text{ M}) + 2Ag$ Given that $E^{\ominus}_{cell} = 1.25$ V

   (b) The cell in which the following reaction occurs:
$2Fe^{3+}(aq) + 2I^-(aq) \rightarrow 2Fe^{2+}(aq) + I_2(s)$
has $E^{\circ}_{cell} = 0.236$ V at 298 K. Calculate the standard Giffs energy and the equilibrium constant of the cell reaction.

(Q. 4 to 5, Five Marks)

4.

   (a) Identify the reaction order from each of the following rate constants :

     • $k = 2.3 \times 10^{-5} \text{L mol}^{-1}\text{s}^{-1}$

     • $k = 3 \times 10^{-4}\text{s}^{-1}$

   (b) State Kohlrausch's law of independent migration of ions.

   (c) What is Positive and Negative adsorption?

5.

   (a) A solution containing 3.100 g of $BaCl_2$ in 250 g of water boils at 100.083°C. Calculate the Van`t Hoff factor and molality of $BaCl_2$ in this solution.
(K_b for water = 0.52 Km^{-1}, molar mass of $BaCl_2$ = 208.3 g mol^{-1})

   (b) Analysis shows that nickel oxide has formula $Ni_{0.98}O_{1.00}$. What fractions of the nickel exist as Ni^{2+} and Ni^{3+}?

   (c) The degree of dissociation of Ca $(NO_3)_2$ in dilute aqueous solution containing 7.0 g of the salt per 100 g of water at 100°C is 70 percent. If the vapour pressure of water at 100°C is 760 mm, calculate the vapour pressure of the solution.