Chemical Equilibrium and hydrogen.

1. Which of the following is an irreversible reaction ?

   ✓a. Neutralisation of strong acid Vs strong base.
   b. Neutralisation of weak acid Vs strong base
   c. Neutralisation of strong acid Vs weak base
   d. Neutralisation of weak acid Vs weak base.

2. For the reaction $A + 2B \rightleftharpoons 3C$, the equilibrium constant K_c is given by

   a. $\dfrac{[A][B]^2}{[C]^3}$ ✓b. $\dfrac{[C]^3}{[A][B]^2}$ c. $\dfrac{3[C]^3}{[A]^2[B]^2}$ d. $\dfrac{[C]^3}{[A]+[B]^2}$

3. For the dissociation of HI, the equilibrium constant is found to be 0.25. What would be the equilibrium constant for the formation of HI ?

   ✓a. 4   b. 3   c. 2   d. 1.

4. For an exothermic reaction,

   a. K is independent of temperature.
   b. K increases as temperature increases.
   ✓c. K decreases as temperature increases.
   d. K varies with addition of reactants.

5. For the reaction $N_2 + 3H_2 \rightleftharpoons 2NH_3$, the value of K_c depends upon.
   a. Initial Conc. of reactants
   b. Pressure   c. temperature   d. all of these

6. For an endothermic reaction @ equilibrium the formation of product can be increased by
   a. Increasing temperature   b. lowering temperature
   c. keeping temperature Constant
   d. decreasing the Conc. of reactant.

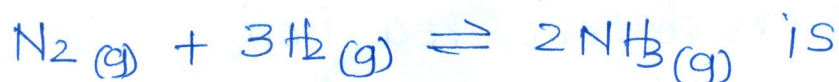7. For the reaction, $nA + mB \longrightarrow$ products, in accordance to Law of Mass Action.
   a. Rate $= K[A]^n + [B]^m$
   b. Rate $= K[A+B]^{n+m}$
   c. Rate $= K + \{[A]^n [B]^m\}$
   d. Rate $= K[A]^n[B]^m$.

8. The relation between k_p and K_c for
   $$N_2 {(g)} + 3H_2 {(g)} \rightleftharpoons 2NH_3 {(g)}$$ is
   a. $K_p = K_c$ b. $K_p = K_c(RT)$
   c. $K_p = K_c(RT)^{-2}$ d. $K_p = K_c(RT)^{-1}$

9. The equilibrium constant for the reaction
   $$2SO_2{(g)} + NO_2{(g)} \rightleftharpoons 2SO_3{(g)} + NO{(g)}$$
   is 16. what will be the equilibrium Constant for the reaction $2SO_2 + 2NO_2 \rightleftharpoons 2SO_3 + 2NO$
   a. 16   b 32   c. 256   d. 4