

9. The K_c value for the dissociation of iodine molecules into iodine atoms is 5.00×10^{-4} at TK.



An analysis was carried out on sample of iodine at TK and the following concentration were obtained $[\text{I}_2]=0.02\text{M}$ and $[\text{I}]=0.001\text{M}$. which of the following is **TRUE**?

- A. $Q_c < K_c$, reaction is moving forward
 B. $Q_c < K_c$, reaction is moving backward
 C. $Q_c > K_c$, reaction is moving backward
 D. $Q_c = K_c$, reaction is at equilibrium
10. At 25°C , the decomposition of N_2O_4 has a K_p value of 0.14.



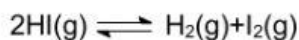
If the partial pressure of NO at equilibrium is 0.15 atm, what is the partial pressure of N_2O_4 in the mixture?

- A. 0.0032 atm C. 0.16 atm
 B. 0.15 atm D. 1.07 atm
11. At 25°C , the value of K_p for the reaction



is 7.13. At equilibrium, the partial pressure of NO_2 in a container is 0.15atm. what is the partial pressure of N_2O_4 in the mixture?

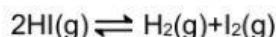
- A. 7.13 C. 0.16
 B. 0.15 D. 0.17
12. At 44°C , the value of K_c for the equilibrium



is 50. If at equilibrium, $[\text{HI}]=0.5\text{mol dm}^{-3}$, what is $[\text{I}_2]$?

- A. 0.0025 C. 0.0045
 B. 3.5355 D. 0.0055

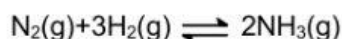
13. For the equilibrium



the value of K_c is 50 at 445°C . If 0.75 mol each of H_2 and I_2 gas are placed in a 1.00dm^3 flask at 445°C , what are the concentrations of HI , H_2 and I_2 after equilibrium is established?

- A. 0.7, 0.7, 0.0992
 B. 0.8, 0.08, 0.0992
 C. 0.6, 0.7, 0.0992
 D. 0.7, 0.7, 0.7

14. For the Haber process

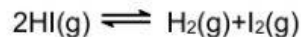


$K_p = 1.45 \times 10^{-5}$ atm at 500°C

In an equilibrium mixture of the three gasses, the partial pressure of H_2 is 0.928 atm and that of N_2 is 0.432 atm. What is the partial pressure of NH_3 ?

- A. 0.432 C. 1.45×10^{-5}
 B. 0.928 D. 2.24×10^{-3}

15. Hydrogen iodide decompose according to the reaction



If a certain temperature, 30% of HI has dissociated to achieve equilibrium and the total pressure is 2.0 atm, calculate the equilibrium constant, K_p .

- A. 0.15 C. 2.0×10^{-2}
 B. 0.3 D. 4.6×10^{-2}