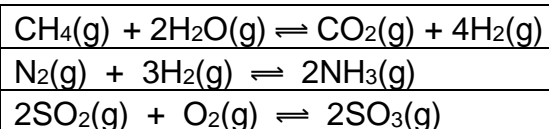


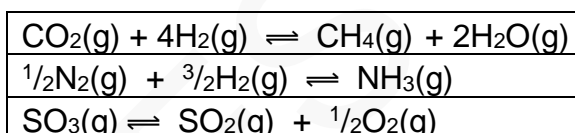
I am able to:

- 1 Explain what you understand by the term *dynamic equilibrium*.
- 2 Explain what is meant by a *closed system*.
- 3 Describe, on a molecular level, how equilibrium is established when a liquid is placed in a closed container.

- 4 Write expressions for the equilibrium constant, K_c , for

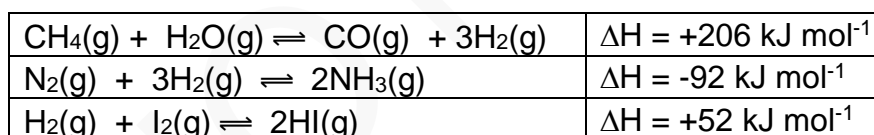


- 5 Write expressions for the equilibrium constant, K_{c1} , for the reactions shown and state the relationship between the values of K_{c1} and K_c in 4



- 6 Explain the connection between the value of the equilibrium constant and the position of equilibrium.

- 7 Predict, for each of the reactions shown, the effect of the changes below on the position of equilibrium and the value of the equilibrium constant

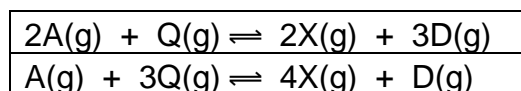


- increasing the pressure
- decreasing the temperature
- adding hydrogen
- adding a catalyst

- 8 Explain whether the reaction $\text{A} \rightleftharpoons \text{B}$ is endothermic or exothermic from the values of the equilibrium constant.

$$K_c = 1.2 \times 10^4 \text{ at } 500 \text{ K and } K_c = 5.6 \times 10^5 \text{ at } 1000 \text{ K}$$

- 9 Write expressions for the reaction quotient, Q , for the following reactions



- 10 Given the value of K_c and the value of Q deduce whether

- A the system is at equilibrium
- B proceeds to the right towards equilibrium
- C proceeds to the left towards equilibrium

