

IGCSE EQUILIBRIUM PRACTICE

In each case predict whether the stated change causes the position of equilibrium to shift to the left or right. Circle the correct answer

- 1 $\text{CO}_{(g)} + 2\text{H}_{2(g)} \rightleftharpoons \text{CH}_3\text{OH}_{(g)}$ Exothermic
increase pressure
LEFT **RIGHT**

- 2 $2\text{SO}_{2(g)} + \text{O}_{2(g)} \rightleftharpoons 2\text{SO}_{3(g)}$ Exothermic
decrease temperature
LEFT **RIGHT**

- 3 $\text{N}_2\text{O}_{4(g)} \rightleftharpoons 2\text{NO}_{2(g)}$ Endothermic
increase temperature
LEFT **RIGHT**

- 4 $2\text{NH}_3 \rightleftharpoons \text{N}_2 + 3\text{H}_2$ $\Delta H = +92 \text{ kJ mol}^{-1}$
decrease pressure
LEFT **RIGHT**

- 5 $\text{N}_{2(g)} + \text{O}_{2(g)} \rightleftharpoons 2\text{NO}_{(g)}$ Endothermic
decrease temperature
LEFT RIGHT

- 6 $\text{CO}_{(g)} + 2\text{H}_{2(g)} \rightleftharpoons \text{CH}_3\text{OH}_{(g)}$ $\Delta H = -ve$
decrease temperature
LEFT **RIGHT**

- 7 $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$ $\Delta H = +ve$
increase temperature
LEFT **RIGHT**

- 8 $\text{CH}_3\text{OH}_{(g)} \rightleftharpoons \text{CO}_{(g)} + 2\text{H}_{2(g)}$ Endothermic
increase the volume of the container
LEFT **RIGHT**

- 9 $2\text{NO}_{2(g)} \rightleftharpoons 2\text{NO}_{(g)} + \text{O}_{2(g)}$ $\Delta H = +ve$
Decrease temperature
LEFT RIGHT

- 10 $\text{CO}_{(g)} + 3\text{H}_{2(g)} \rightleftharpoons \text{CH}_4_{(g)} + \text{H}_2\text{O}_{(g)}$
decrease pressure
LEFT RIGHT

- 11 $\text{PCl}_{3(g)} + \text{Cl}_{2(g)} \rightleftharpoons \text{PCl}_{5(g)}$
decrease the volume of the reaction vessel
LEFT **RIGHT**

- 12 $4\text{NH}_{3(g)} + 5\text{O}_{2(g)} \rightleftharpoons 4\text{NO}_{(g)} + 6\text{H}_2\text{O}_{(g)}$
increase pressure
LEFT RIGHT