2025 Ch H1 Q19

Section: Chemistry in Society

Topic: Catalysts

Question summary

Which of the following is a correct statement about a catalyst in a reaction?

Worked solution

A. It increases the activation energy – False. Catalysts lower the activation energy.

B. It decreases the kinetic energy of reactant particles – False. Catalysts do not affect the particles' energy.

C. It shifts the equilibrium to the right – False. Catalysts speed up both forward and reverse reactions equally, so equilibrium position is unchanged.

D. It has no effect on the enthalpy change – True. Catalysts change only the rate, not ΔH.

Final answer

D. It has no effect on the enthalpy change.

Revision tips

- Catalysts provide an alternative reaction pathway with lower activation energy.

- They increase rate but do not affect the equilibrium constant (K).

- Enthalpy change (ΔH) depends only on reactants and products, not on the route taken.