2025 Ch H1 Q16

Section: Chemistry in Society

Topic: Equilibria

Question Summary

For the equilibrium A <-> B (DeltaH = -100 kJ mol^-1), which combination of conditions will favour the formation of B?

Worked Solution

The negative enthalpy change shows that the forward reaction is exothermic.

According to Le Chatelier's principle, lowering the temperature shifts the equilibrium towards the exothermic direction (product side).

A lower activation energy for the forward reaction also increases the rate of product formation.

Therefore, the conditions that favour the formation of B are low temperature and low activation energy.

Final Answer D

D. low temperature and low activation energy

Revision Tips

- For exothermic reactions, lowering temperature favours product formation.
- For endothermic reactions, raising temperature favours product

formation.
- Catalysts lower activation energy equally in both directions, helping equilibrium to be reached faster but not changing its position.