Chemical energetics – 2022J O Level 5070

1. June/2022/Paper_11/No.18

For the forward reaction of a reversible reaction, the enthalpy change of reaction, ΔH, is –50 kJ / mol and the activation energy, E_a, is +60 kJ / mol.

What is the activation energy of the reverse reaction?

A –110 kJ / mol

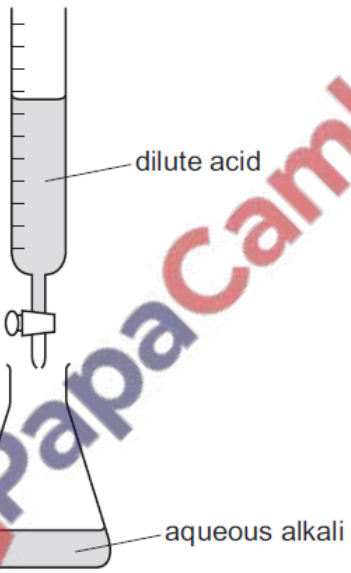
B –10 kJ / mol

C +10 kJ / mol

D +110 kJ / mol

2. June/2022/Paper_11/No.19

The diagram shows a titration experiment.



Which row about the reaction in the conical flask is correct?

	the reaction is	the value of ΔH is
A	endothermic	negative
B	endothermic	positive
C	exothermic	negative
D	exothermic	positive

3. June/2022/Paper_12/No.18

Which reaction is exothermic?

A combustion of methane

B cracking of hydrocarbons

C decomposition of water into hydrogen and oxygen by electrolysis

D photosynthesis in plants

4. June/2022/Paper_12/No.19

What is the correct balanced equation and enthalpy change, ΔH, for the complete combustion of butanol, C_4H_9OH?

A $C_4H_9OH(l) + 5O_2(g) \rightarrow 4CO_2(g) + 5H_2O(g)$ $\Delta H = -2676\,kJ/mol$

B $C_4H_9OH(l) + 5O_2(g) \rightarrow 4CO_2(g) + 5H_2O(g)$ $\Delta H = +2676\,kJ/mol$

C $C_4H_9OH(l) + 6O_2(g) \rightarrow 4CO_2(g) + 5H_2O(g)$ $\Delta H = -2676\,kJ/mol$

D $C_4H_9OH(l) + 6O_2(g) \rightarrow 4CO_2(g) + 5H_2O(g)$ $\Delta H = +2676\,kJ/mol$