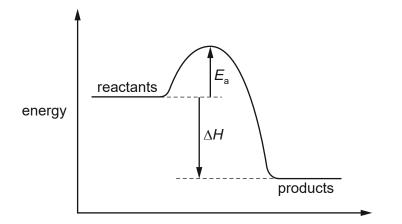
## **ENERGY LEVEL DIAGRAMS**

1 The energy level diagram for a reaction is shown.



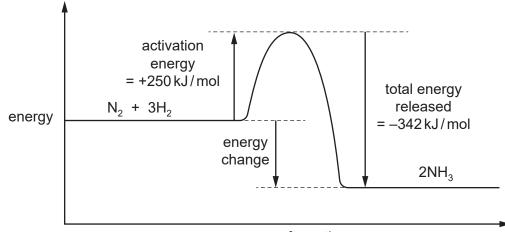
Which row is correct?

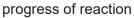
	sign of $\Delta H$	overall energy change	sign of $E_{a}$
Α	_	exothermic	-
в	+	endothermic	+
С	+	endothermic	- 50
D	_	exothermic	<b>*</b>

2 The equation for the formation of ammonia is shown.

$$N_2 \ + \ 3H_2 \ \rightarrow \ 2NH_3$$

The energy level diagram for the reaction is shown.

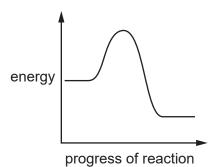




What is the energy change for the reaction?

- A \_592 kJ/mol
- B -92 kJ/mol
- **C** +92 kJ/mol
- D +592 kJ/mol WWW.smartexamresources.com

3 An energy level diagram for a reaction is shown.

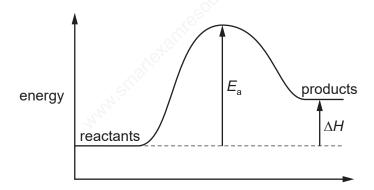


Which statement and explanation about this reaction are correct?

	statement	explanation
Α	the reaction is endothermic	the products have more energy than the reactants
в	the reaction is endothermic	the products have less energy than the reactants
С	the reaction is exothermic	the products have more energy than the reactants
D	the reaction is exothermic	the products have less energy than the reactants

## 8

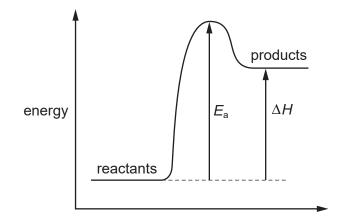
4 The energy level diagram for a reaction is shown.



Which statement is not correct for this energy level diagram?

- A It could be the energy level diagram for the reaction when petrol is burnt.
- **B** Less energy is released in bond forming than is needed for bond breaking.
- **C** The activation energy,  $E_a$ , has a positive value.
- **D** The energy change,  $\Delta H$ , for the reaction is positive.

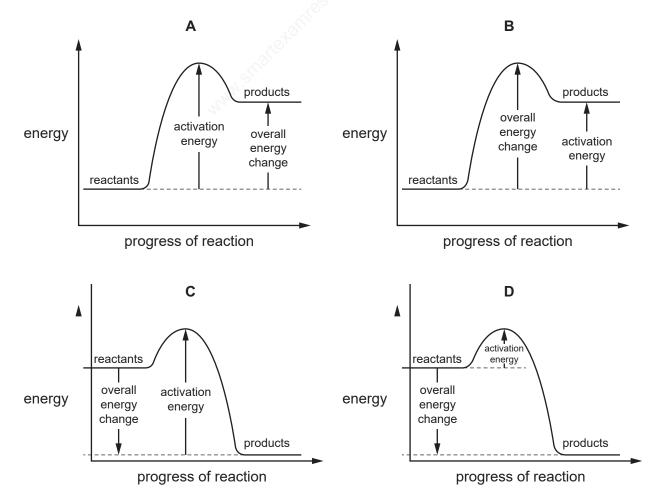
5 The energy level diagram for a reaction is shown.



Which row is correct?

	sign of $\Delta H$	overall energy change	sign of $E_{a}$
Α	_	exothermic	-
в	+	endothermic	+
С	+	endothermic	_
D	+	exothermic	+

6 Which diagram is a correctly labelled energy level diagram for an endothermic reaction?



www.smartexamresources.com