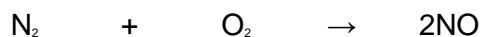
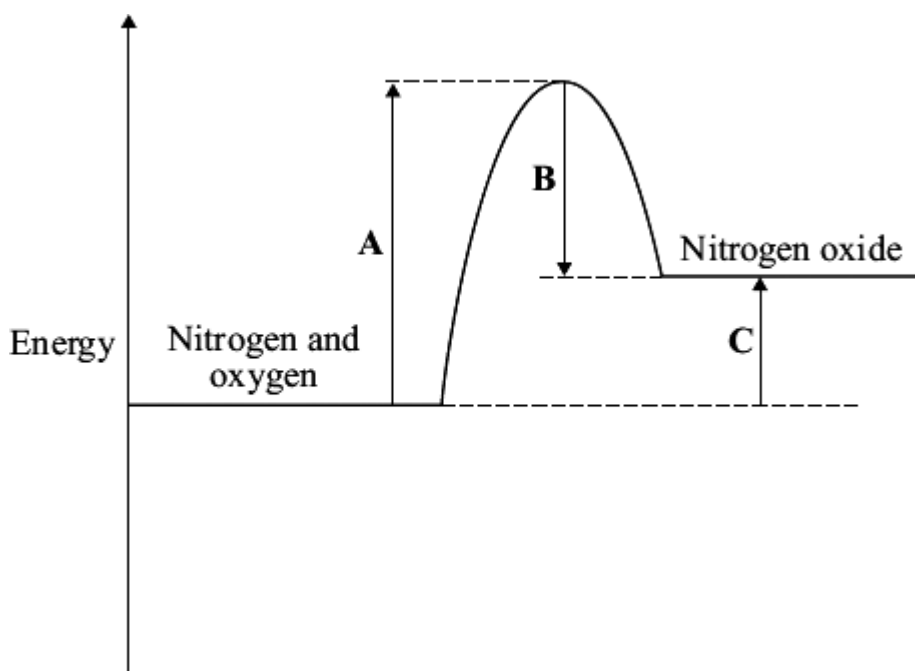


**Q1.** During a thunderstorm lightning strikes the Eiffel Tower.

An equation that represents this endothermic reaction is:



The energy level diagram for this reaction is given below.



(a) The energy level diagram shows that this reaction is *endothermic*.

Explain how.

.....  
.....

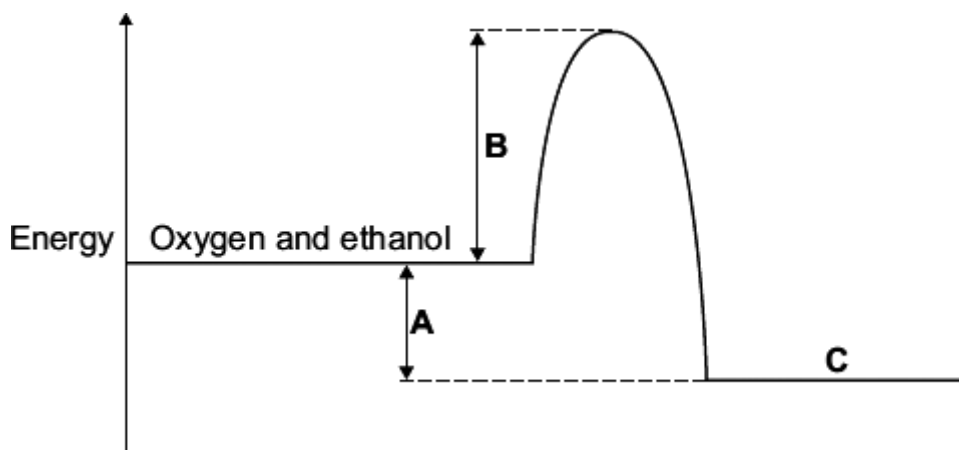
(1)

(b) What is meant by the term *activation energy*?

.....  
.....

(1)

The energy level diagram represents the energy changes during this reaction.



(a) On the energy level diagram what is represented by the letter:

**A**

.....

**B**

.....

**C**

.....

(3)

(b) What type of reaction is represented by this energy level diagram?

.....  
 .....

Which sub-atomic particles are present in the nucleus of an atom?

..... and  
 .....

(2)

(b) There are two isotopes of the element chlorine:



Describe, in terms of sub-atomic particles, **one** similarity and **one** difference between atoms of the two isotopes of chlorine.

Similarity

.....

Difference

.....

(2)