

CATALYSTS – TOPIC TEST 1

QUESTION 1

Which of the following statements regarding catalysts is incorrect?

- A Catalysts lower the activation energy barrier for the reaction.
- B Catalysts can be homogenous or heterogeneous.
- C Catalysts increase the amount of product made.
- D Catalysts can be recovered at the end of the reaction.

QUESTION 2

Which of the following statements regarding catalysts is incorrect?

Catalysts can increase the amount of product formed during a chemical reaction by

- A Decreasing the activation energy barrier.
- B Stabilising the activated complex (transition state).
- C Positioning reactants in the correct orientation.
- D Decreasing the energy of the reactants.

QUESTION 3

Which of the following statements regarding catalysts is incorrect?

- A An activated complex forms at lower energy than without the presence of a catalyst.
- B Catalysts act by introducing a lower energy path by which the reaction can take place.
- C A **catalyst** is a chemical that increases the rate of a chemical reaction without itself being changed by the reaction.
- D Chemical catalysts affect both the rate and the equilibrium constant of a chemical reaction.

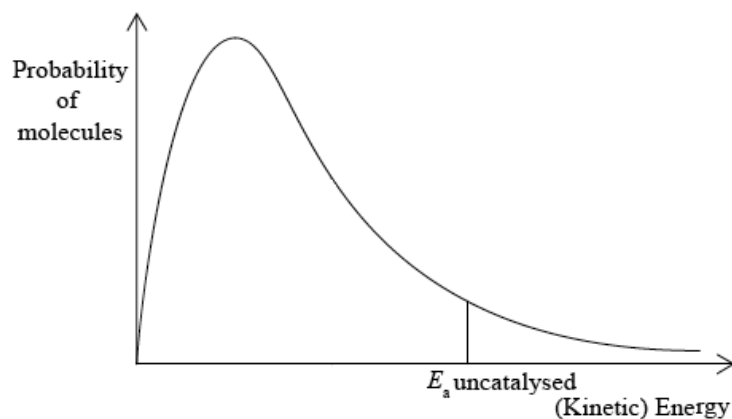
QUESTION 4

Which of the following statements regarding catalysts is incorrect?

- A Catalysts work more effectively when their surface area is large.
- B Catalysts affect the energy of the reactants.
- C Chemical catalysts increase the rate of a chemical reaction in both directions, forward and reverse.
- D Catalysts do not change the yield of product.

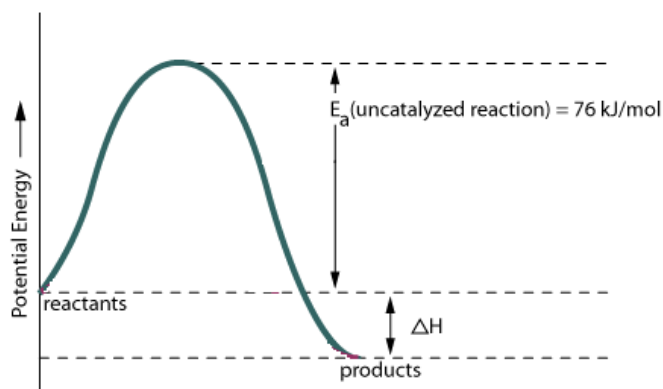
QUESTION 5

The Maxwell-Boltzmann graph is shown below. Sketch the effect that a catalyst has on this graph.



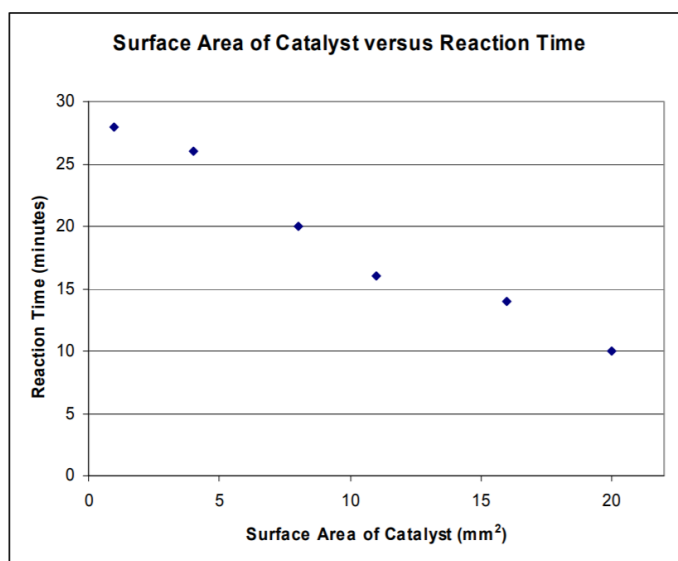
QUESTION 6

The enthalpy profile of an exothermic reaction is shown below. Sketch the effect that a catalyst has on this graph.



QUESTION 7

Below is a graph of data from an experiment to see how the surface area of a catalyst affected reaction rates.



On the graph provided, sketch what you would expect to see if a catalyst was added to the reaction mixture.

ANSWERS

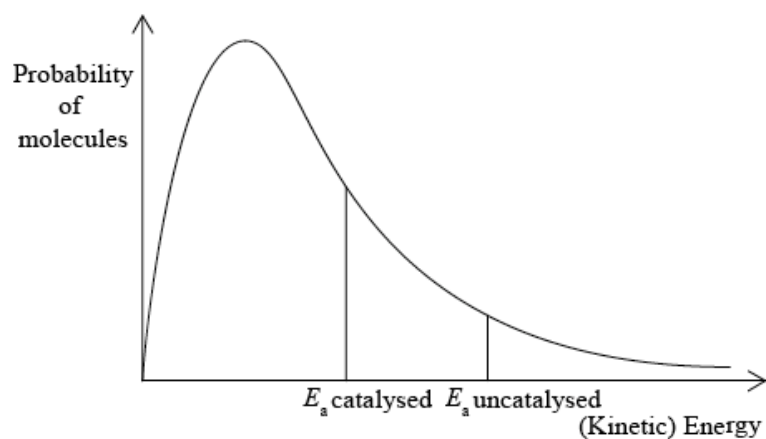
QUESTION 1 Answer is C

QUESTION 2 Answer is D

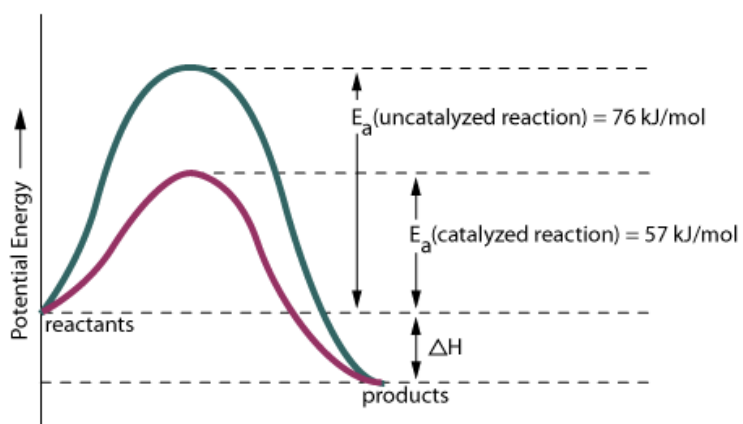
QUESTION 3 Answer is D

QUESTION 4 Answer is B

QUESTION 6



QUESTION 6



QUESTION 7

