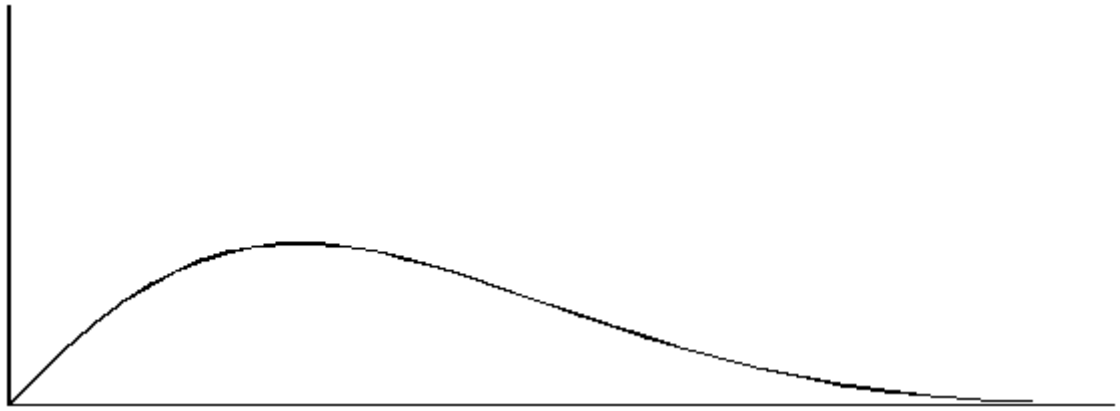
Practice Question Set For A-Level
Subject : Chemistry
Paper-2 Topic: Kinetics

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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

The diagram below represents a Maxwell–Boltzmann distribution curve for the particles in a sample of a gas at a given temperature. The questions below refer to this sample of particles.



(a) Label the axes on the diagram.

(2)

(b) On the diagram draw a curve to show the distribution for this sample at a **lower** temperature.

(2)

(c) In order for two particles to react they must collide. Explain why most collisions do not result in a reaction.

_____

(1)

(d) State one way in which the collision frequency between particles in a gas can be increased without changing the temperature.

_____

(1)

(e) Suggest why a small increase in temperature can lead to a large increase in the reaction rate between colliding particles.

_____

_____

_____

(2)

(f) Explain in general terms how a catalyst works.

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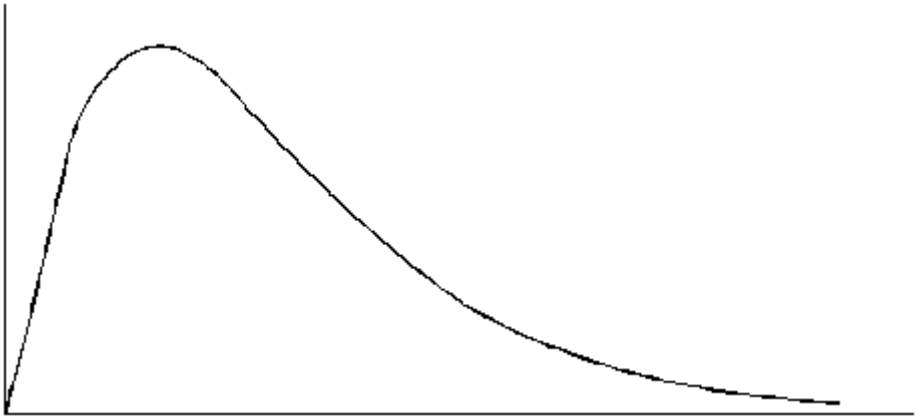
(2)

(Total 10 marks)

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Q2.

(a) Below is a Maxwell–Boltzmann curve showing the distribution of molecular energies for a sample of gas at a temperature *T*.



(i) Label the axes on the diagram above.

(ii) What does the area under the curve represent?

_____

(iii) State why this curve starts at the origin.

_____

(4)

(b) (i) State what is meant by the term *activation energy*.

_____

_____

(ii) The rate of a chemical reaction may be increased by an increase in reactant concentration, by an increase in temperature and by the addition of a catalyst.

State which, if any, of these changes involves a different activation energy. Explain your answer.

Change(s) _____

Explanation _____

_____

(5)

(Total 9 marks)

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