

Q.1

Name: _____

- (a) Answer the following in relation to enzymes.
- (i) What is their chemical nature? _____
 - (ii) Comment upon their molecular shape. _____
- (b) Answer the following in relation to an investigation that you carried out into the effect of temperature on the rate of enzyme action.
- (i) Name the enzyme that you used.

 - (ii) Name the substrate of this enzyme.

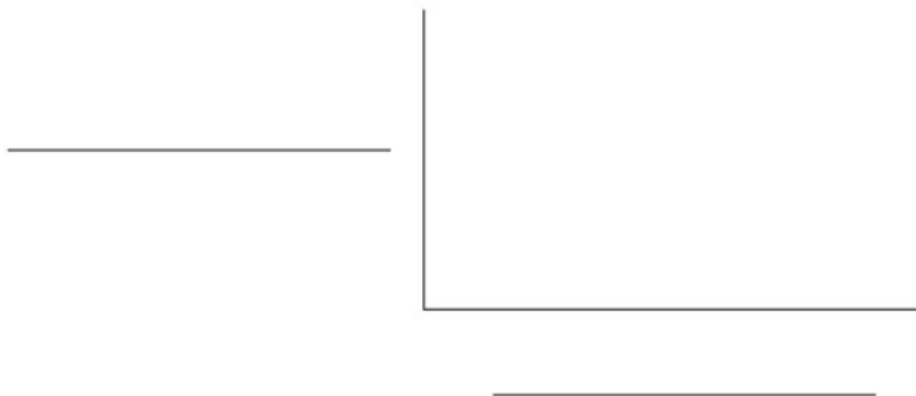
 - (iii) Why was it necessary to keep the pH constant in the course of the investigation?

 - (iv) How did you keep the pH constant?

 - (v) How did you vary the temperature in the course of the investigation?

 - (vi) How did you know that the enzyme was working?

 - (vii) Use the axes below to summarise the results of your investigation.
Do this by
 1. labelling the axes,
 2. drawing a graph to show how the rate of enzyme action varied with temperature.



Q.2

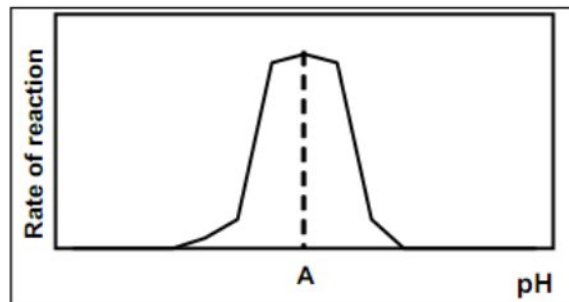
Enzymes are used in many processes in both plants and animals.

- (i) What is an enzyme?
- (ii) Name any **one** enzyme, **and** its substrate, **and** its product.
- (iii) The rate of activity of enzymes can be affected by various factors. Name any **two** factors that can affect enzyme activity.
- (iv) Enzymes are sometimes immobilised in industrial processes. What is meant by the term *immobilised* in relation to enzymes?
- (v) Give **one** advantage of using immobilised enzymes.

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Q.3

The graph shows how the rate of reaction of a carbohydrate-digesting enzyme in the human alimentary canal varies with pH.



- (a) Name a carbohydrate-digesting enzyme in the human alimentary canal
- (b) Where in the alimentary canal does this enzyme act?
- (c) State the enzyme's product (s)
- (d) What is the pH at A?
- (e) A is said to be the enzyme'spH
- (f) Suggest a temperature at which human enzymes work best.....
- (g) What term best describes the shape of an enzyme?.....

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