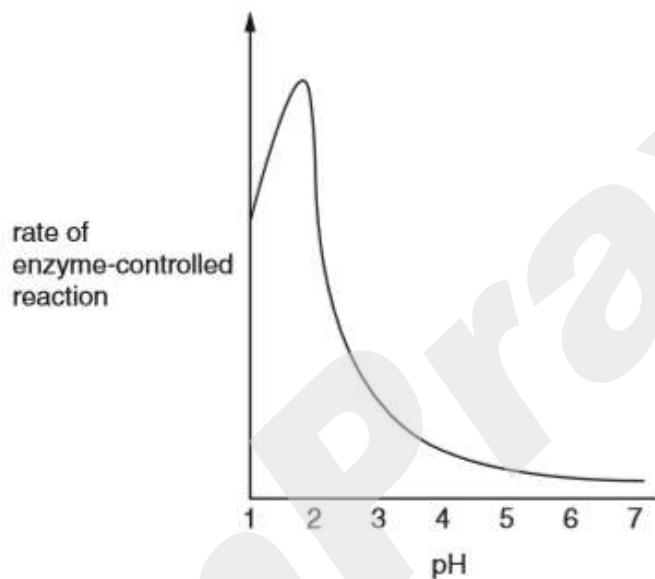


Enzyme

IGCSE Biology Topical Questions Paper 1

May/June 2003

- 10 The graph shows how the rate of an enzyme-controlled reaction changes with pH.



- Which statement is correct?
- A This enzyme is destroyed by acidic conditions.
 - B This enzyme works best in acidic conditions.
 - C This enzyme works best in alkaline conditions.
 - D This enzyme works best in neutral conditions.
- 11 Which kind of molecule could be an enzyme?
- A fat
 - B glucose
 - C protein
 - D starch

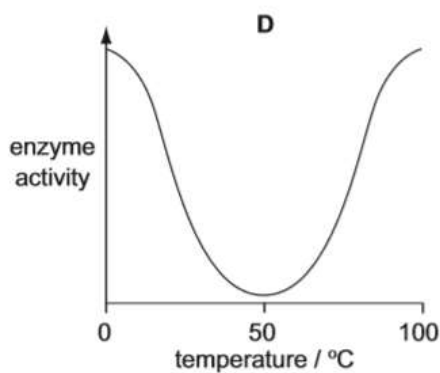
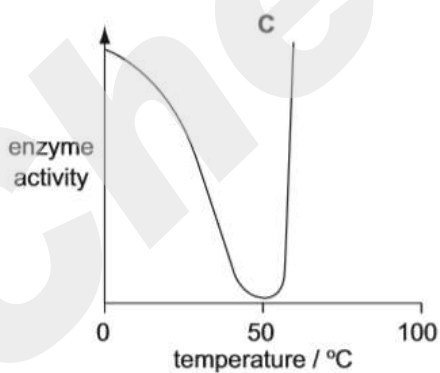
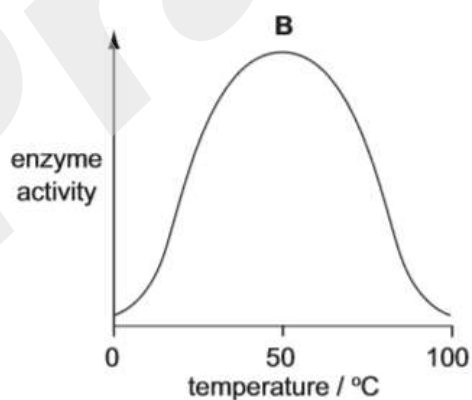
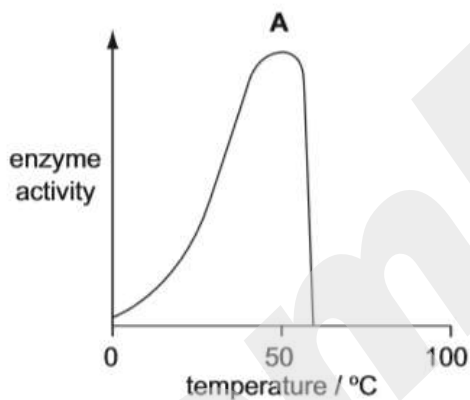
May/June 2004

- 10** The table shows the conditions in four test-tubes containing equal quantities of starch and salivary amylase.

In which test-tube is the starch broken down fastest?

	pH	temperature
A	2	27
B	2	37
C	7	27
D	7	37

- 11** Which graph shows the effect of temperature on the activity of an enzyme?



Oct/Nov 2004

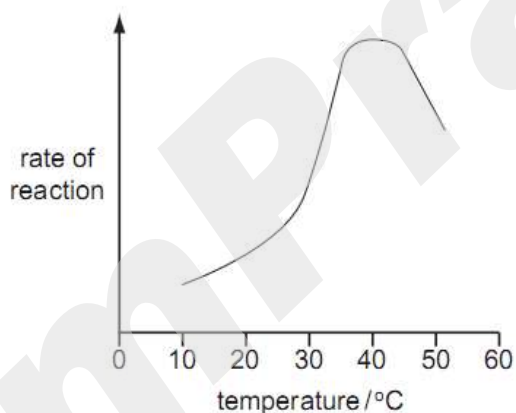
11 Two samples of a human enzyme were used in an experiment. Before they were used

- sample **X** was heated to 80°C and then cooled to 37°C
- sample **Y** was cooled to 0°C and then heated to 37°C .

How will this affect their activity?

- A** Sample **X** and sample **Y** are no longer active.
- B** Sample **X** and sample **Y** will be equally active.
- C** Sample **X** will be more active than sample **Y**.
- D** Sample **Y** will be more active than sample **X**.

12 The graph shows the effect of temperature on the digestion of starch.



At which temperature are most starch molecules broken down in one minute?

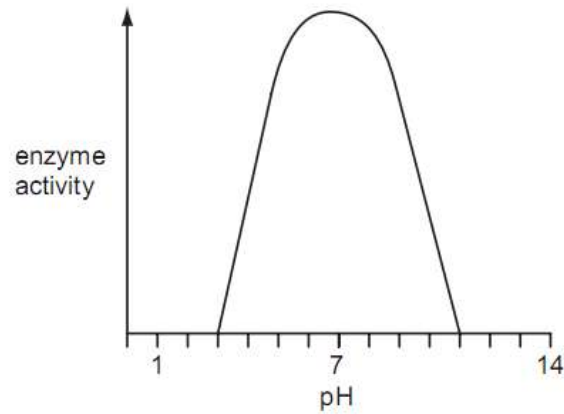
- A** 10°C
- B** 30°C
- C** 40°C
- D** 50°C

May/June 2005

12 What is the optimum pH for a stomach protease?

- A** pH2
- B** pH7
- C** pH9
- D** pH12

13 The graph shows the activity of an enzyme.



What does the graph show about the activity of this enzyme?

- A It is destroyed by high temperatures.
- B It is most active in acid conditions.
- C It is most active in neutral conditions.
- D It is unaffected by pH.

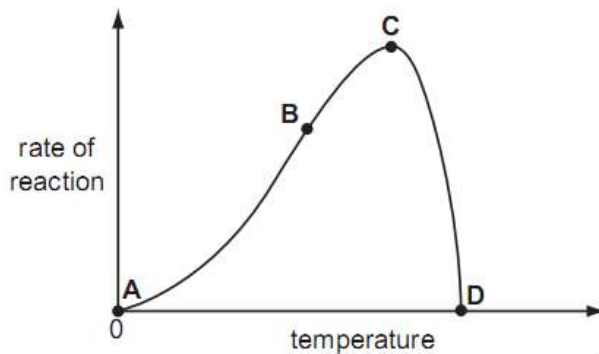
Oct/Nov 2005

12 During digestion, large molecules are broken into smaller molecules by which of the following?

- A bile
- B enzymes
- C peristalsis
- D teeth

13 The graph shows the rate of an enzyme-controlled reaction at different temperatures.

Which point on the graph shows that the enzyme has been denatured (destroyed)?



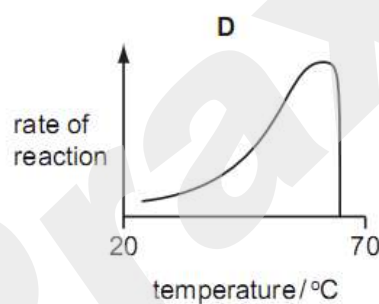
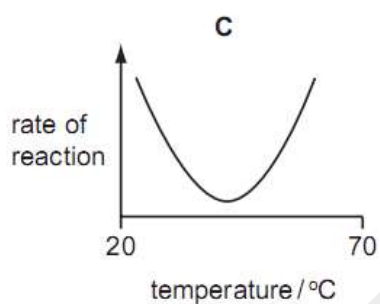
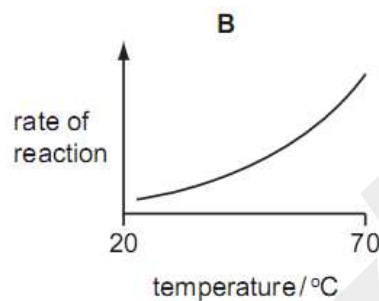
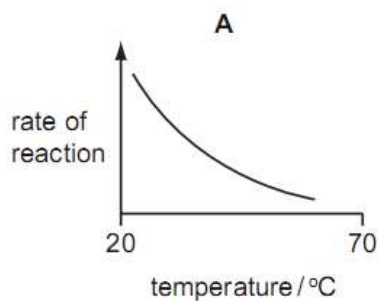
May/June 2006

11 Starch is digested by amylase in the mouth, but it is not digested in the stomach.

What is the reason for this?

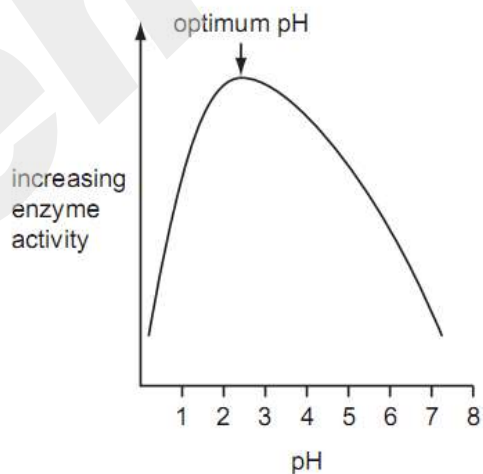
- A All starch digestion is completed in the mouth.
- B The pH in the stomach is not suitable for the amylase to work.
- C The starch does not stay in the stomach long enough to be digested.
- D The temperature in the stomach is not suitable for the amylase to work.

12 Which graph shows the effect of temperature on the activity of a human digestive enzyme?



Oct/Nov 2006

10 The graph shows the results of experiments in which the activity of an enzyme was measured at different pH values.

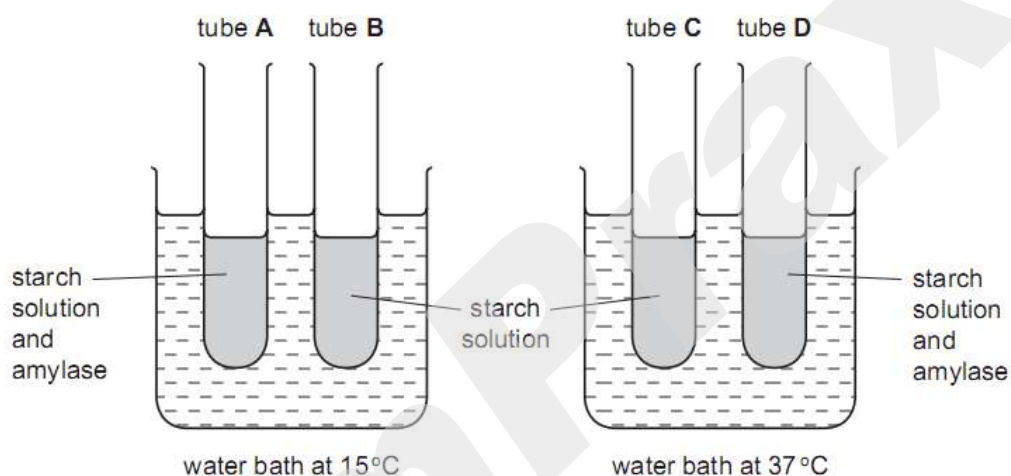


In which part of the alimentary canal would this enzyme be likely to work?

- A mouth cavity
- B oesophagus
- C small intestine
- D stomach

11 The apparatus shown in the diagram was used for an experiment on starch digestion.

Which tube would contain most sugar after 20 minutes?



May/June 2007

11 The temperature of an enzyme-controlled reaction is increased by 10 °C.

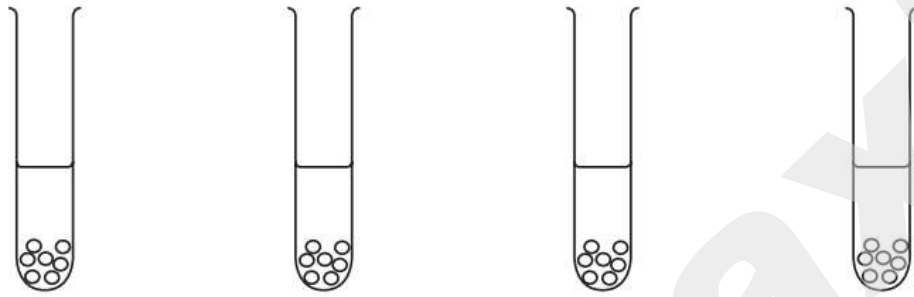
How does this affect the rate of reaction?

- A It always increases the rate.
- B It always decreases the rate.
- C It may increase or decrease the rate.
- D It has no effect on the rate.

- 12 An enzyme from the stomach that digests protein, and cooked egg white that contains protein, are placed in four test-tubes.

When the egg white is digested the mixture becomes clear.

Which tube becomes clear first?



A
egg white
and enzyme
acid
temperature 20 °C

B
egg white
and enzyme
acid
temperature 37 °C

C
egg white
and enzyme
alkali
temperature 20 °C

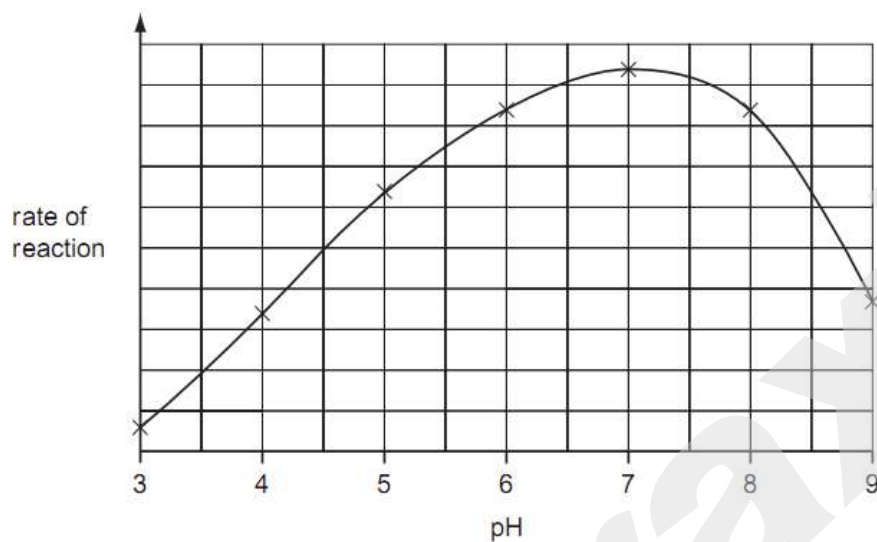
D
egg white
and enzyme
alkali
temperature 37 °C

Oct/Nov 2007

- 11 What helps proteins to change into amino acids?

- A** antibodies
- B** auxins
- C** enzymes
- D** hormones

12 The graph shows the effect of pH on the rate of reaction of an enzyme.



What does the graph show?

- A The enzyme is destroyed at pH 9.
- B The enzyme works best at pH 6.
- C The rate of reaction halves as the pH changes from pH 5 to pH 7.
- D The rate of reaction is the same at pH 5 and pH 8.5.

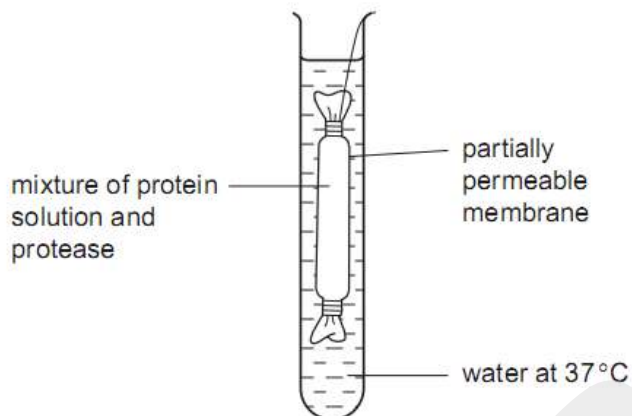
May/June 2008

12 Which are characteristics of enzymes?

- A They are carbohydrates and biological catalysts.
- B They are carbohydrates and chemical messengers.
- C They are proteins and biological catalysts.
- D They are proteins and chemical messengers.

Oct/Nov 2008

11 An experiment on diffusion was set up as shown in the diagram.



What was found in the water after 15 minutes?

- A amino acids
- B fatty acids
- C glucose
- D glycerol

12 Which substance is an enzyme?

- A bile
- B fibrinogen
- C lipase
- D maltose

May/June 2009

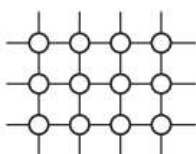

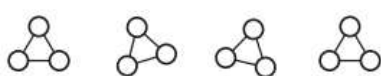

11 What is the optimum pH for stomach protease?

- A pH2 B pH7 C pH9 D pH12

12 The diagram shows part of a starch molecule.



Which diagram shows this molecule after it has been **completely** digested?

- A 
- B 
- C 
- D 

Oct/Nov 2009

11 Which graph shows the effect of temperature on the activity of a human digestive enzyme?

