

1. Nov/2020/Paper_12/No.8

What are the substrates and end products for amylase and lipase?

	amylase		lipase	
	substrate	end product	substrate	end product
A	protein	amino acids	fat	fatty acids and glycerol
B	protein	amino acids	glycogen	glucose
C	starch	maltose	fat	fatty acids and glycerol
D	starch	maltose	protein	amino acids

2. Jun/2020/Paper_11/No.4

Which property of enzymes is explained by the lock and key hypothesis?

- A All enzymes are proteins.
- B Enzymes are inactive at very low temperatures.
- C Human enzymes are most active just below 40 °C.
- D Most enzymes can catalyse only one reaction.

3. Jun/2020/Paper_12/No.4

Which substance is an enzyme?

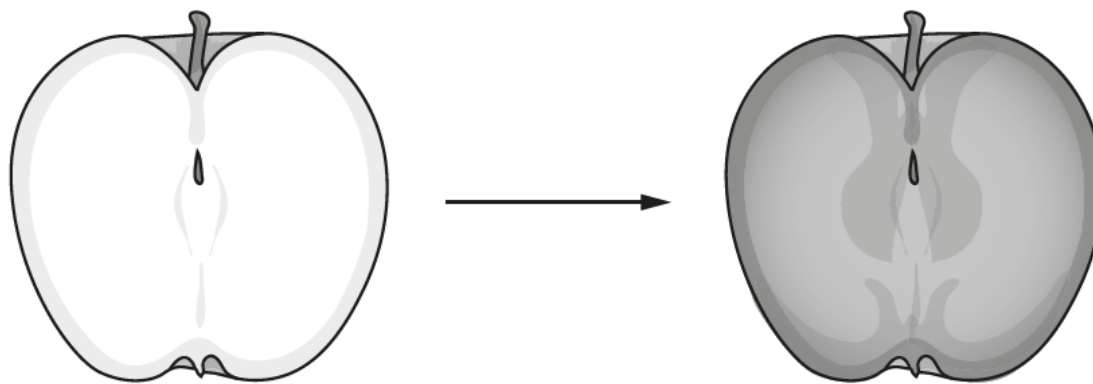
- A chlorophyll
- B fibrinogen
- C insulin
- D lipase

4. Jun/2020/Paper_12/No.5

What is the effect on plants of a lack of magnesium ions?

- A Chlorophyll production is reduced.
- B Leaves turn dark green.
- C Starch production increases.
- D Young leaves wilt.

When an apple fruit is cut open, the cut surface of apple tissue quickly becomes brown and is less likely to be eaten. This change in colour is shown in the diagram.



white apple tissue immediately after being cut

brown apple tissue a short time after being cut

(a) The change in colour of the apple tissue is due to a series of chemical reactions. An enzyme called PPO acts as a catalyst for one of these reactions.

(i) State what is meant by the term *catalyst*.

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(ii) The change in colour can be prevented by placing the cut surface of apple tissue in boiling water for a short time immediately after the fruit is cut.

Explain this observation using the *lock and key* hypothesis of enzyme action.

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(b) Scientists have recently used the process of genetic engineering to develop a type of apple that does **not** produce the enzyme PPO in its tissues.

Suggest possible advantages of this type of apple.

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[Total: 9]

