



Hajdar cleft

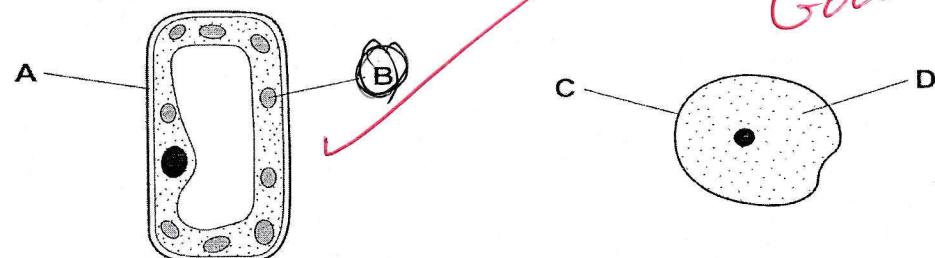
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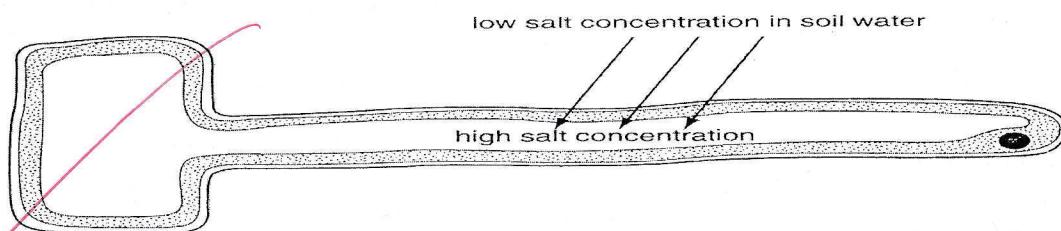
The diagram shows a cell from a plant leaf and a cell from an animal's skin.

Which part will stain blue-black with iodine solution?



Good Job!!

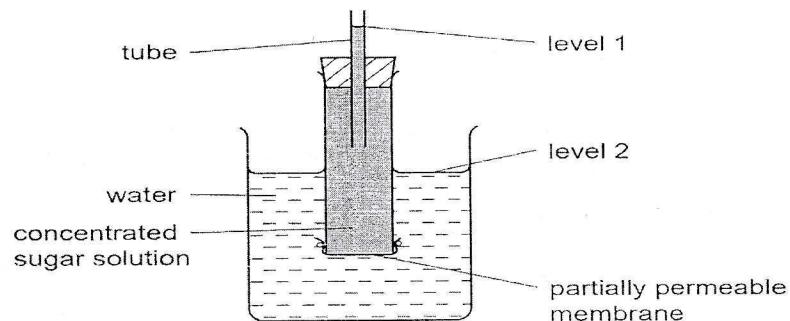
The arrows show the movement of salts into a cell.



Which describes the movement of the salts?

- A active transport against the concentration gradient
- B active transport down the concentration gradient
- C diffusion against the concentration gradient
- D diffusion down the concentration gradient

The diagram shows apparatus used to investigate osmosis.

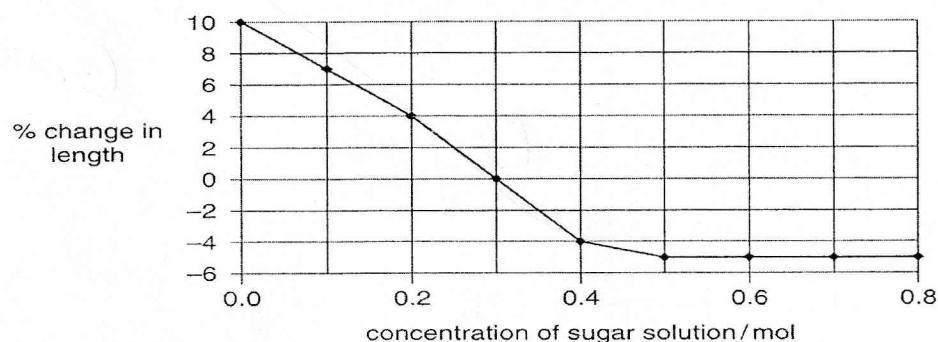


Which molecules will move across the partially permeable membrane and which changes in levels will occur?

	molecules	level 1	level 2
A	sugar	fall	rise
B	water	fall	rise
C	sugar	rise	fall
D	water	rise	fall

3

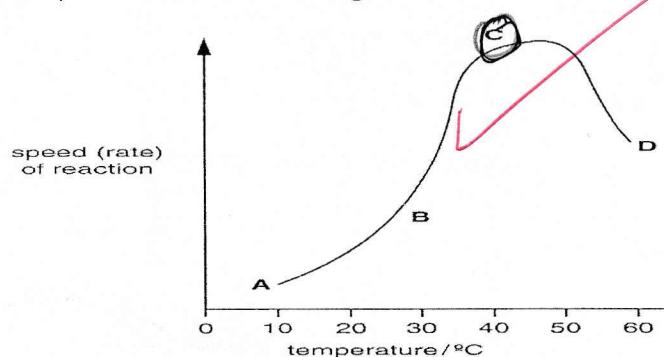
Cylinders of potato tissue were placed in different concentrations of a sugar solution. The graph shows the percentage change in length of the cylinders of potato tissue.



Which solution has the same water potential as the potato tissue?

- A 0.0 mol
- B 0.2 mol
- C 0.3 mol
- D 0.5 mol

The graph shows the effect of temperature on a chemical reaction which is controlled by enzymes.  
At which point are most product molecules being released?



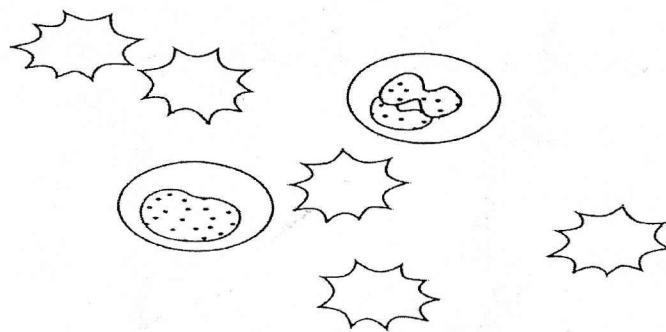
A human red blood cell is placed in a strong salt solution.

In which direction does water move and what is the effect on the cell?

	movement of water	effect on cell
A	into the cell	slight increase in size
B	into the cell	cell bursts
C	out of the cell	slight decrease in size
D	out of the cell	no change in cell volume

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The diagram shows cells in fresh blood, after the blood is diluted with a liquid.



Which statement describes the liquid?

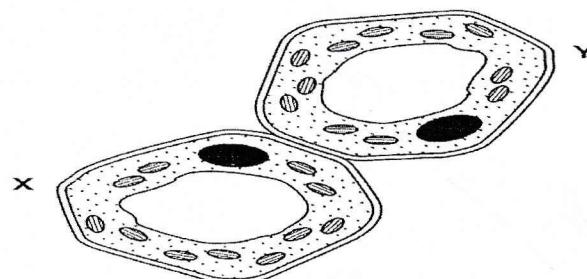
- A The water potential of the liquid is equal to that of pure water.
- B The water potential of the liquid is equal to that of the cytoplasm.
- C The water potential of the liquid is higher than that of the cytoplasm.
- D The water potential of the liquid is lower than that of the cytoplasm.

According to the lock and key hypothesis, which is the lock and which is the key for the enzyme lipase?

	key	lock
A	fatty acids	lipids
B	lipase	lipids
C	lipase	fatty acids
D	lipids	lipase

The diagram shows two plant cells, X and Y.

Cell X has a higher water potential than cell Y.



In which direction and by what process will water move between these two cells?

	direction	process
A	X to Y	active transport
B	X to Y	osmosis
C	Y to X	active transport
D	Y to X	osmosis

3

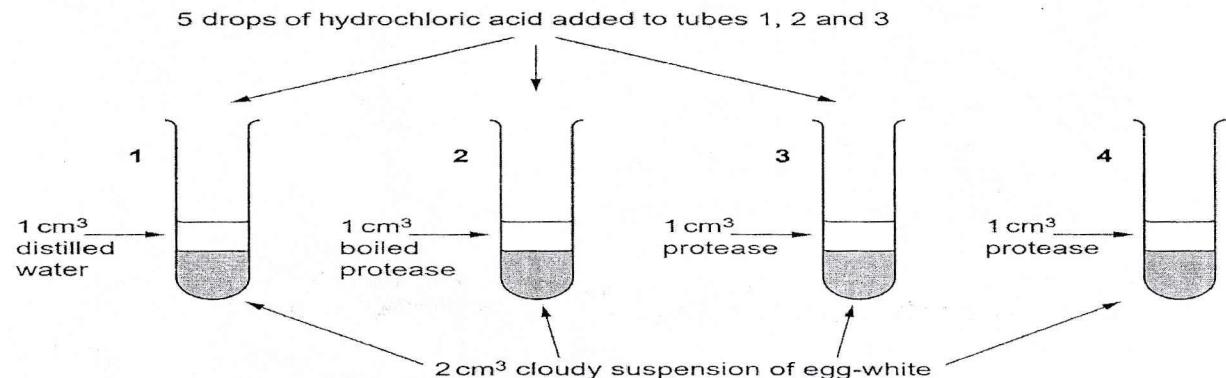
Which processes can take place in a root hair cell when oxygen is not available?

- A active transport only
- B diffusion only
- C active transport and osmosis
- D diffusion and osmosis

Which process may require energy from respiration?

- A movement of carbon dioxide into the alveoli
- B movement of oxygen into red blood cells
- C uptake of glucose by cells in the villi
- D uptake of water by root hair cells

Four test-tubes are set up as shown.



All four tubes are then placed in a water-bath at 37 °C for 20 minutes.

What is the result?

	tube number			
	1	2	3	4
A	clear	clear	clear	clear
B	clear	cloudy	cloudy	clear
C	cloudy	cloudy	clear	cloudy
D	cloudy	clear	cloudy	clear

1 clear  
2 cloudy

c

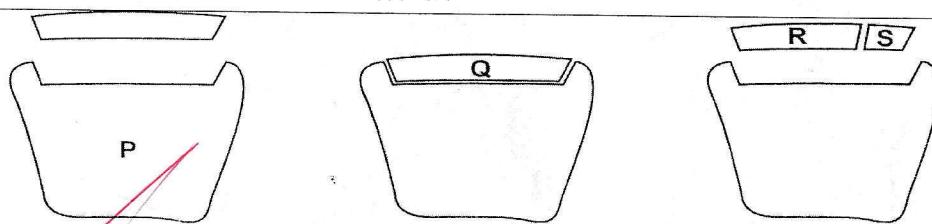
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Four different foods were tested as shown below and the test results were recorded as positive (+) or negative (-).

Which food contained both glucose and oil?

food	Benedict's test	biuret test	ethanol emulsion test	iodine test
A	+	+	-	-
B	+	-	+	-
C	-	+	-	+
D	-	-	+	+

The diagram represents stages in the breakdown of starch to maltose by the enzyme amylase.



Which are the correct labels?

	amylase	maltose	starch
A	P	S	Q
B	Q	R	S
C	R	Q	P
D	S	P	R

What causes water to enter plant roots from the soil?

- A Water potential in root hairs and the soil is equal.
- B Water potential in root hairs and xylem is equal.
- C Water potential in root hairs is higher than in the soil.
- D Water potential in root hairs is lower than in the soil.

Fig. 1.1 shows apparatus at the start of an experiment to investigate the digestion of an emulsion of fat droplets in water by enzyme A.

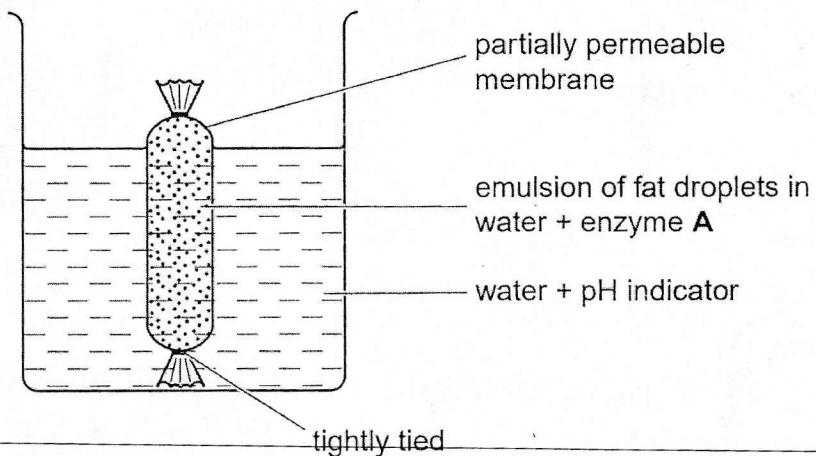


Fig. 1.1

The pH indicator is green in a pH of 7, blue when the pH is above 7 and red when it is below 7. The apparatus is kept at 40 °C for 20 minutes during which time the indicator changes from green to red.

(b) (i) State the identity of enzyme A. Lipase (1)

(ii) Explain why the apparatus was kept at 40 °C.

Because its optimum temperature where enzymes work best at an optimal mole accurate answer is [2]

(c) Name the products of digestion of the emulsion by enzyme A.

fatty acids and glycerol (2) [2]

(d) Describe the processes which led to the change in pH.

Diffusion occurred where emulsion at fat droplets diffuse from outside inside where its mole concentrated to outside which is low concentrated causing color at pH to change [2]

Note:

In an experiment a leaf was tested for the presence of starch and the presence of reducing sugar. Describe how you would carry out these tests.

starch: By using iodine test. Place the leaf in iodine solution if it turned dark blue starch is present. If it stayed brown starch is absent [3]

reducing sugar: By using Benedict test we place the leaf in Benedict solution and supply heating in water bath if color changes from blue to green traces of reducing sugar [3]

then yellow to from green to yellow little amount of reducing sugar from yellow to orange if a lot amount of reducing sugar is

Fig. 2.1 shows, in order, four stages in which an enzyme-controlled chemical reaction may occur.

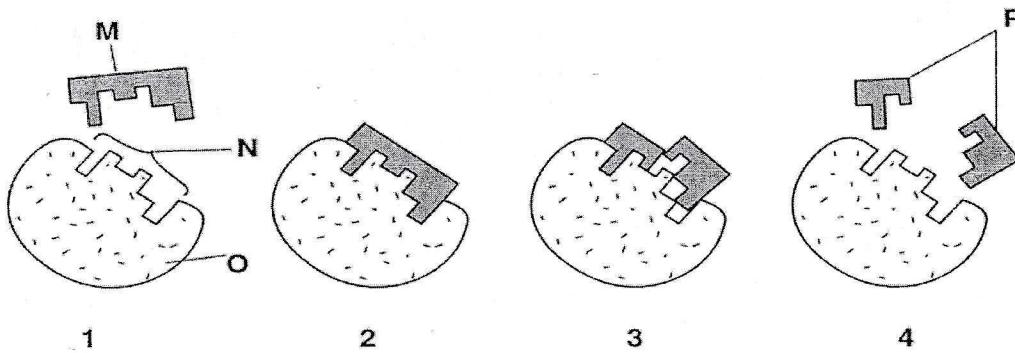


Fig. 2.1

- (a) Identify M, N, O and P.

M Substrate

N active site

O enzyme

P products

[4]

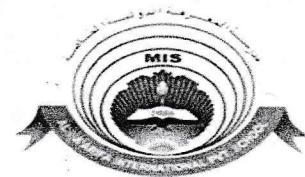
- (b) By referring to Fig. 2.1, explain why only a small amount of enzyme is needed to catalyse a reaction involving many molecules.

because it moves because enzyme remains unchanged after the process such as Fig. 2.1 and products

detach from it and its ready to bind to a new substrate [1]

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### Grade 9 British -Biology -Quiz-1

#### Group A

#### INSTRUCTIONS

- Answer all Questions.
- Use a black or dark blue pen.
- Write your name and fill in all required information in the box at the bottom of the page.
- Write your answer to each question in the space provided.
- Do not use an erasable pen or correction fluid.
- You may use a calculator.

#### INFORMATION

- The total Points for this paper is **30 Points**
- **Duration: 45 Minutes – [9:25-10:05]**
- The number of marks for each question or part question is shown in brackets [.....].
- This document consists of **9** printed pages.

18

30

Student Name : ..... *Maidar alef* .....

Grade Level and section : ..... *9 BBRB* .....

Fig. 1.1 shows cells from three different types of organism (not drawn to the same scale).

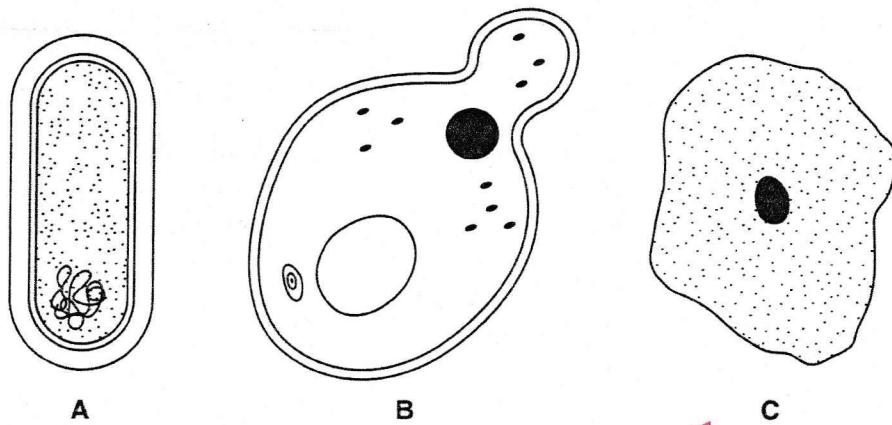


Fig. 1.1

- (a) Name the type of organism represented by each of the cells and in each case give a reason for your answer.

organism A ~~bacterium~~

reason ..... ~~circular DNA looks~~ ✓

organism B ~~Plant cell~~

reason ..... ~~contains chloroplast, large vacuole~~ ✓ 2

organism C ~~animal cell~~

reason ..... ~~it has no cell wall, chloroplast, capsule~~ [3] ✓

(b) Fig. 1.2 shows a one-celled organism that has both plant and animal characteristics.

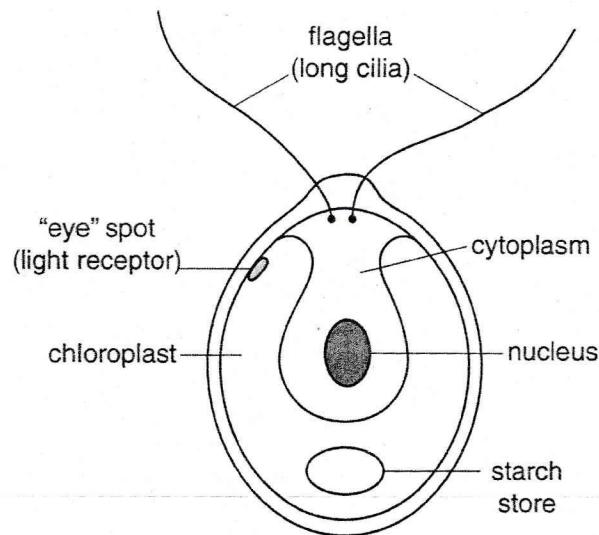


Fig. 1.2

State two reasons in each case why the organism might be identified as

(i) an animal

1. .... it has a nucleus *X* .....
2. .... it has cytoplasm *X* .....

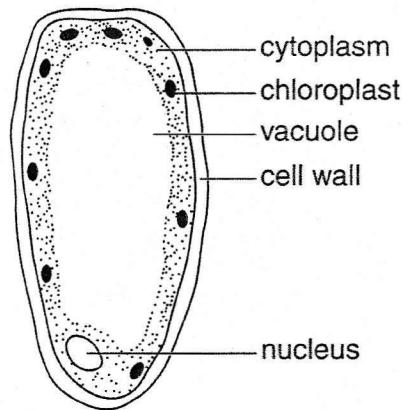
[2]  
①

(ii) a plant

1. .... it has chloroplast *X* .....
2. .... it has nucleus *X* .....

[2]

Fig. 5.1 shows a palisade cell from the leaf of a flowering plant.



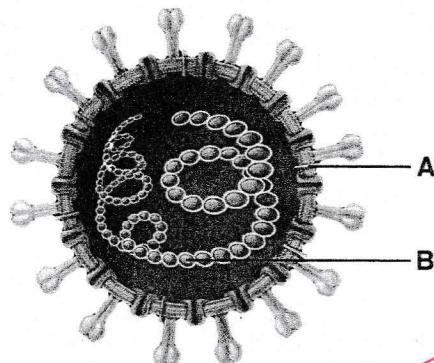
**Fig. 5.1**

- (a) State **three** ways in which this cell differs from a fungal hypha.

palisade cell	fungal hypha
1. it has chloroplast	it is made up of thread like structure
2. Feed by photosynthesis	feed by saprophytic or parasitic nutrition
3. Reproduce by seeds	reproduce by spores

[3]

The diagram shows the structure of a virus.



- (a) Identify the structures labelled **A** and **B** on the diagram.

A capsid (protein coat)

B Strand of ~~host~~ genetic material

[2]

- (i) State **two** characteristics of bacteria that are **not** characteristics of viruses.

1 move

2 excrete

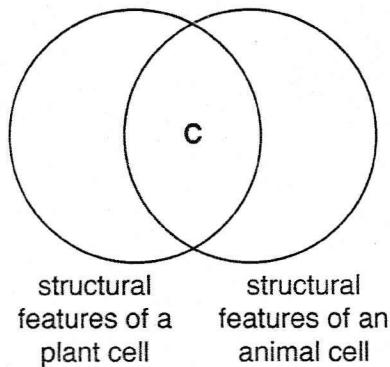
[2]

- (ii) State **one** structural feature **absent** in a bacterial cell that is always present in a plant cell.

nucleus

[1]

The diagram shows how the structural features found in plant cells and in animal cells can be grouped together.



List three features that would be grouped in region C on the diagram.

- 1 ..... both have nucleus.
- 2 ..... both have cytoplasm.
- 3 ..... both have cell membrane.

[3]

3

I Fig. 1.1 is a dichotomous key. It can be used to identify different types of tree by using their leaves.

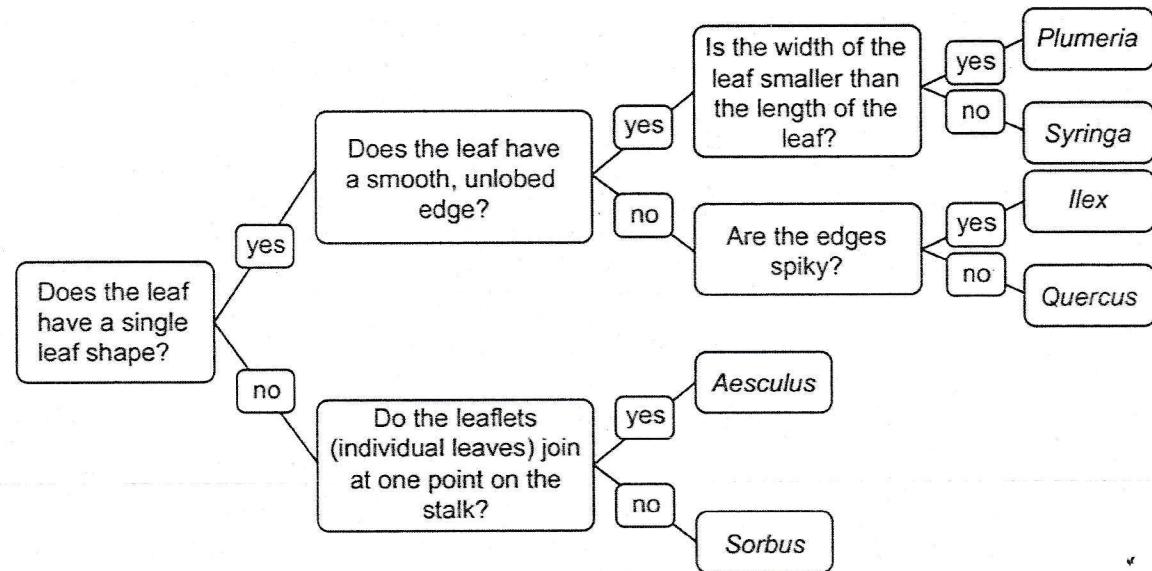


Fig. 1.1

Fig. 1.2 shows leaves from six different trees.

Use the key in Fig. 1.1 to identify the six different types of tree.

Write the name of each tree on the lines in Fig. 1.2.

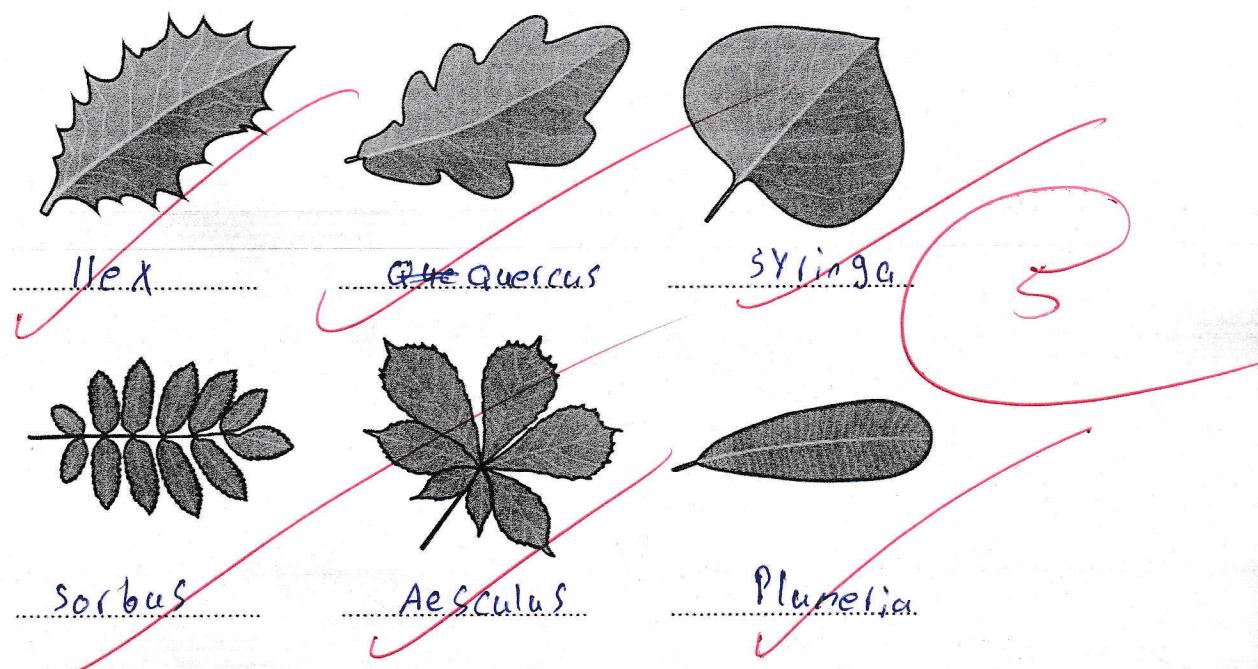


Fig. 1.2

[5]

- (a) The photograph in Fig. 2.1 shows a leaf from a European holly tree (*Ilex aquifolium*).

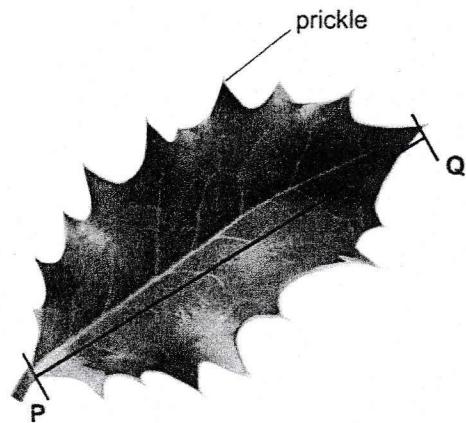
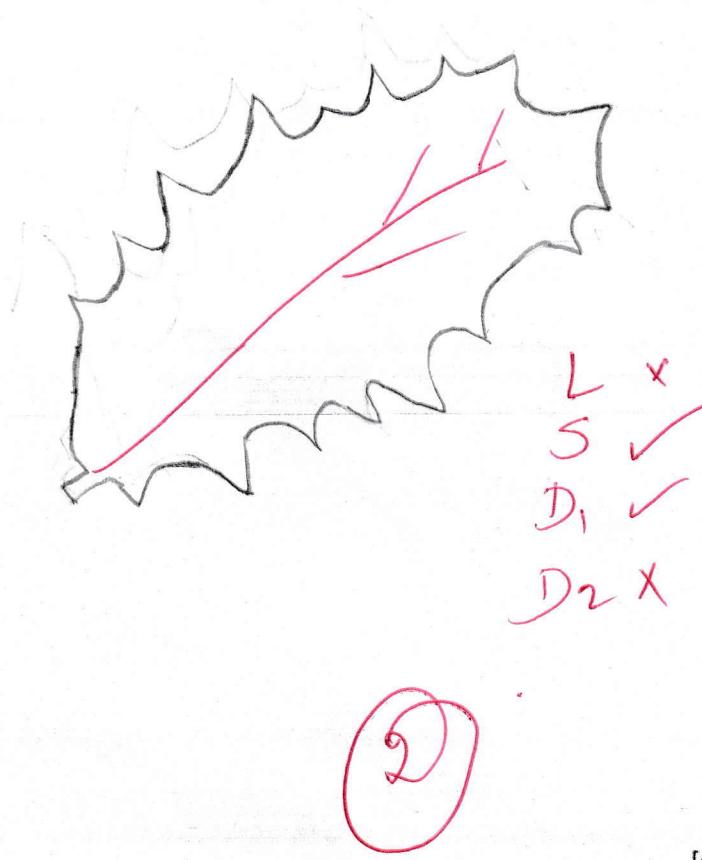


Fig. 2.1

- (i) Draw a large diagram of the holly leaf shown in Fig. 2.1.

Do **not** label your drawing.



[4]

(ii) The line PQ on Fig. 2.1 shows the length of the leaf.

Calculate the magnification of your drawing

Space for working.

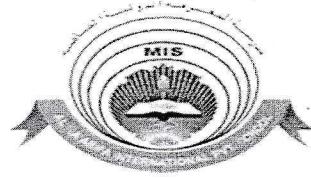
$$\frac{\text{image size}}{\text{actual size}} = \frac{6\text{ cm}}{6\text{ cm}} = 1000X$$

~~magnification = 1000 micrometers [3]~~

~~or 1000 X~~

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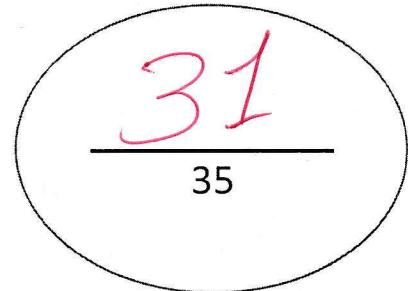
### Grade 9 British -Biology - Quiz-2

#### INSTRUCTIONS

- Answer all Questions.
- Use a black or dark blue pen.
- Write your name and fill in all required information in the box at the bottom of the page.
- Write your answer to each question in the space provided.
- Do not use an erasable pen or correction fluid.
- You may use a calculator.

#### INFORMATION

- The total Points for this paper is **35 Points**
- **Duration: 50 Minutes**
- The number of marks for each question or part question is shown in brackets [.....].



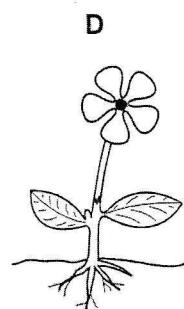
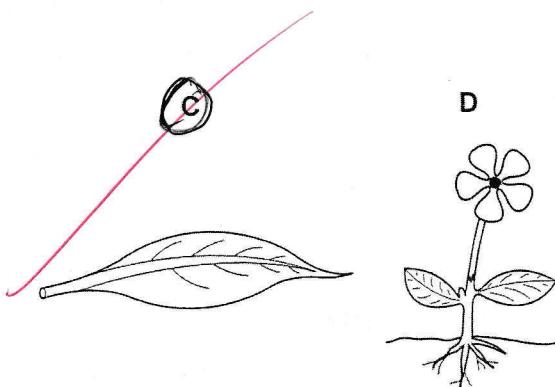
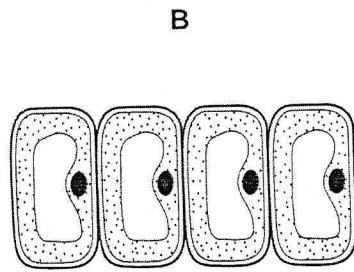
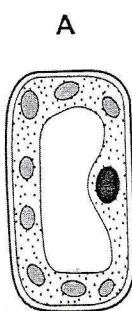
Student Name : .....Hajdayalef.....

Grade Level and section : .....9.B.B.I.B.....

1. Which row shows the most likely number of chloroplasts in three types of cell in a leaf?

	epidermis	palisade mesophyll	guard cells
A	0	6	17
B	0	17	6
C	6	17	0
D	17	0	6

2. Which diagram shows one organ only?



3. On a dry, sunny day, how does water vapour move through the stomata of a leaf?

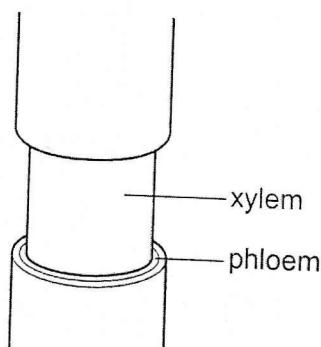
- A into the leaf by diffusion
- B into the leaf by osmosis
- C out of the leaf by diffusion
- D out of the leaf by osmosis

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4. What is a description of transpiration?

- A exchange of gases between the leaf and the atmosphere
- B loss of water vapour from the leaves and stems of a plant
- C movement of water from the roots to the leaves
- D movement of water through the cells of the leaf

5. The diagram shows the stem of a plant. A strip of the outer tissue including the phloem has been removed.

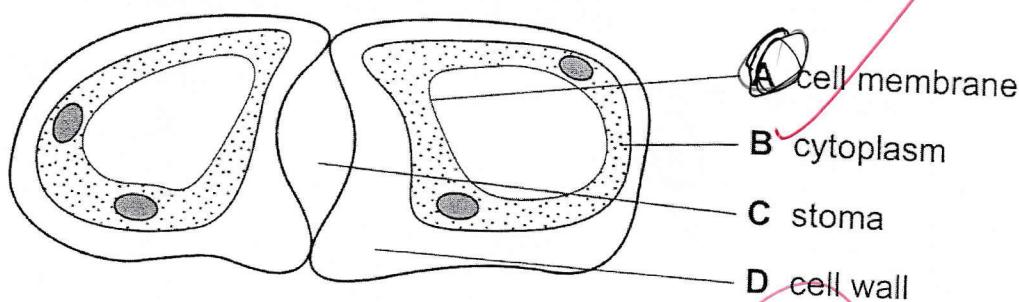


How is transport in the plant affected?

- A Amino acids and sucrose cannot pass to the roots.
- B Dissolved salts cannot pass to the leaves.
- C Water cannot pass to the leaves.
- D Water cannot pass to the roots.

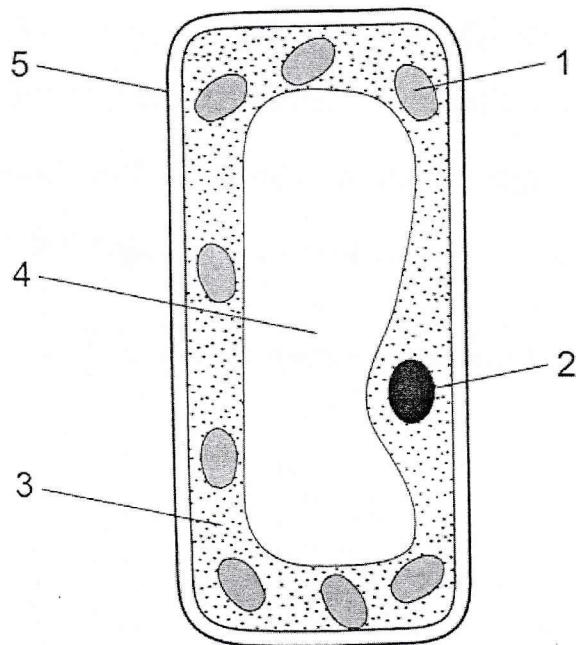
6. The diagram shows a student's drawing of guard cells.

Which label line is **incorrect**?



(3)

7. The diagram shows a cell from a plant leaf.

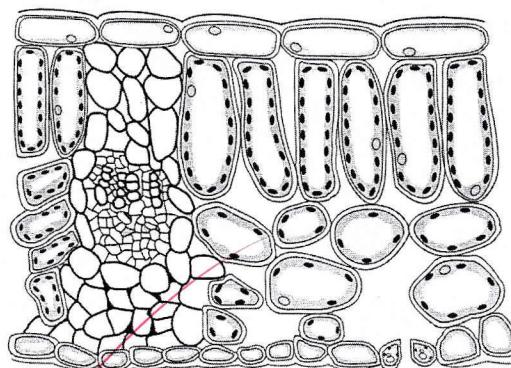


Which parts are not found in animal cells?

- A 1 and 2      B 2 and 3      C 3 and 4

D 4 and 5

8. The actual thickness of the leaf shown in the diagram is 2000 µm, but its thickness in the diagram is 50 mm.



What is the magnification of the diagram?

- A  $\times 0.025$

B  $\times 25$

- C  $\times 100$

- D  $\times 100\,000$

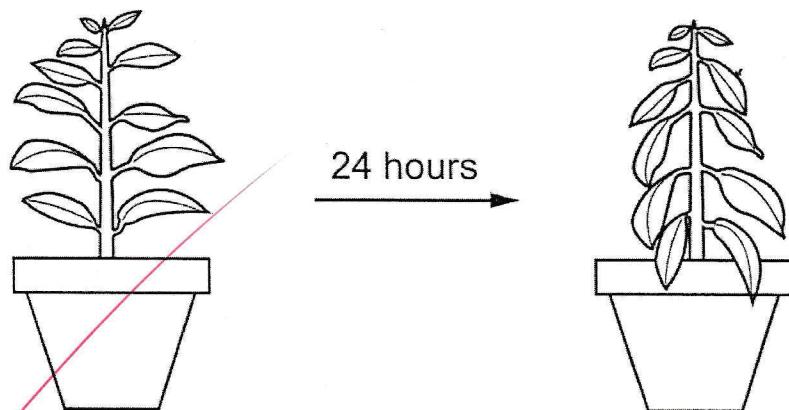
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9. For the stomata of a leaf to open, the guard cells accumulate more potassium ions than the surrounding cells.

Which row describes what happens?

	movement of potassium ions	movement of water in relation to guard cells	final state of the guard cells
A	active transport	in	turgid
B	active transport	out	flaccid
C	diffusion	in	plasmolysed
D	diffusion	out	no change

10. The diagram shows a potted plant and the same plant 24 hours later.



What causes the change in the appearance of the plant?

- A Water loss is greater than water uptake.
- B Water moves from the leaves to the stem.
- C Water uptake is equal to water loss.
- D Water uptake is greater than water loss.

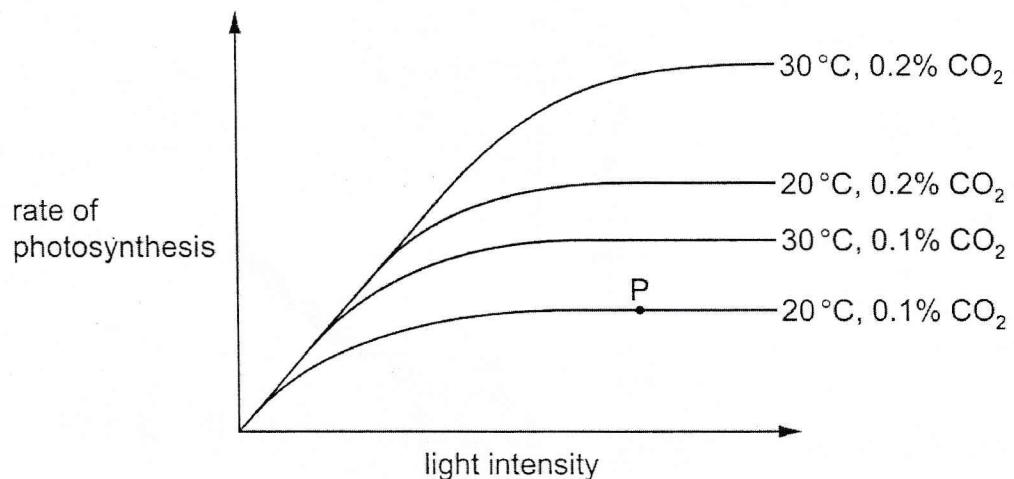
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11. What are the features of the cell walls in a xylem vessel?

	end wall	side wall
A	absent	thick
B	absent	thin
C	present	thick
D	present	thin

12. The diagram shows how the rate of photosynthesis varies with light intensity.

The four curves show different conditions of temperature and carbon dioxide concentration.

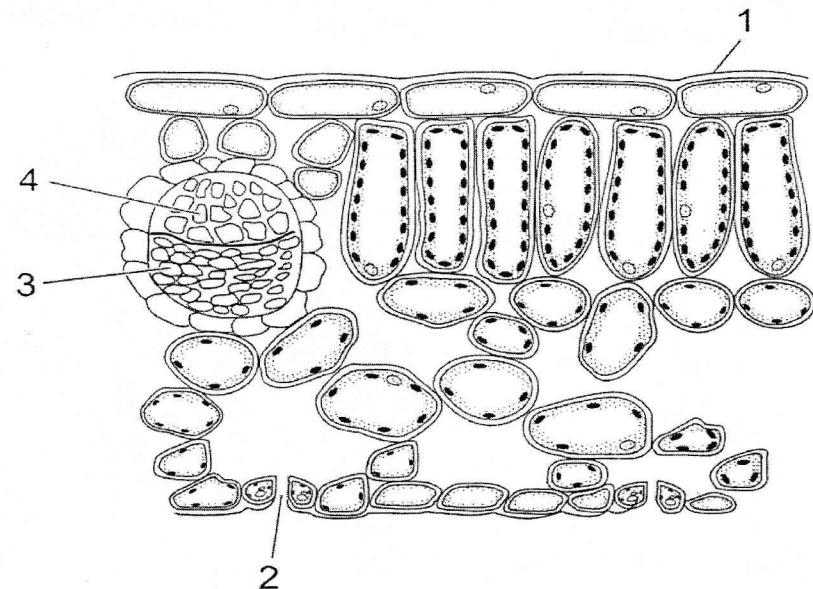


What limits the rate of photosynthesis at point P?

	light intensity	carbon dioxide concentration	temperature
A	✓	✓	✗
B	✓	✗	✗
C	✗	✓	✓
D	✗	✗	✓

2

13. The diagram shows part of a leaf in cross-section.



What shows the correct function of a numbered part?

	part	functions
A	1	photosynthesis
B	2	gaseous exchange
C	3	transport of water from the root
D	4	transport of sugars to the root

14. The roots of plants take up nitrates from the soil.

What are the nitrates used to make?

- A fat
- B glucose
- C protein
- D starch

Q /

Fig. 3.1 shows a small, deep-rooted bush growing in a warm, dry climate. Branches **B** and **C** have a similar number of leaves, but the leaves of branch **B** are enclosed in a transparent polythene bag that empties into a container.

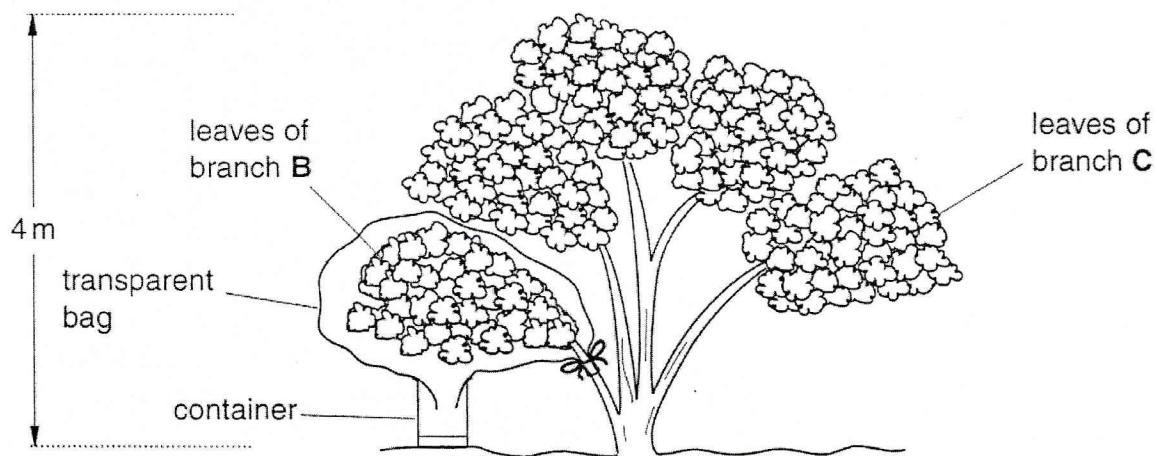


Fig. 3.1

Fig. 3.2 is a graph showing the total volume of water lost by the leaves of each of the two branches during the same day.

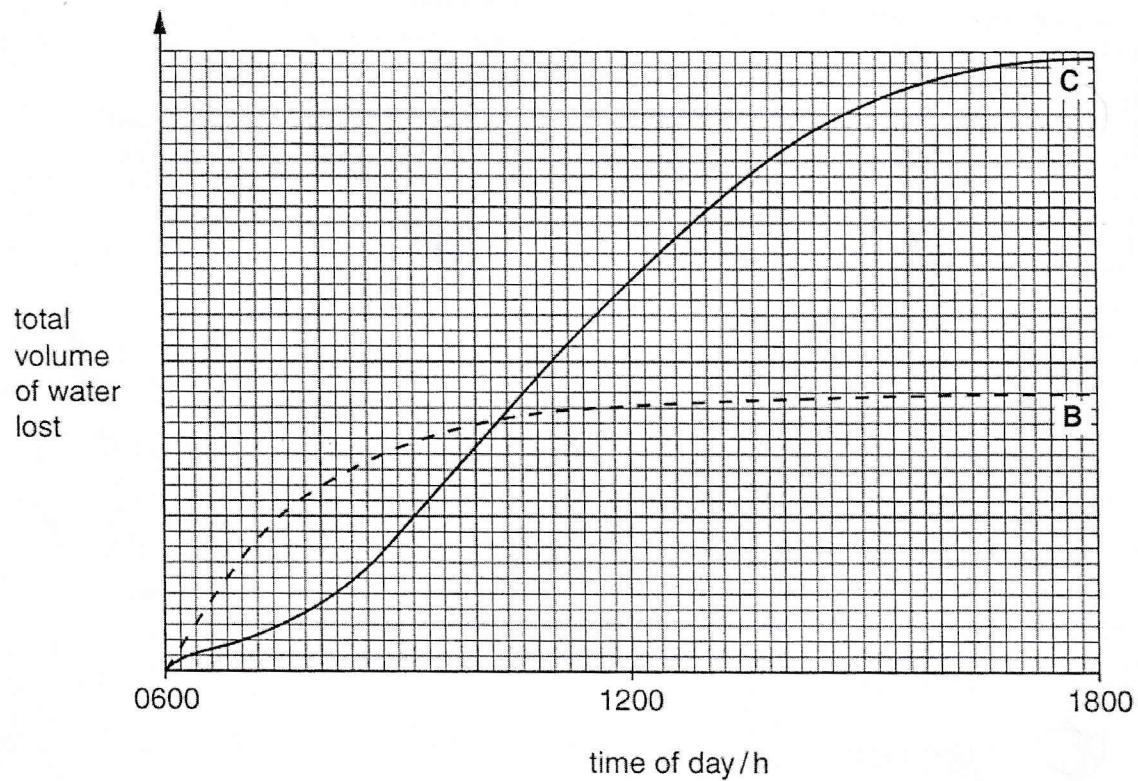


Fig. 3.2

- (a) State two environmental factors responsible for the water loss during the day by branch C. For each factor, explain how it affects water loss.

factor 1. .... Temperature .....

explanation

..... more temperature increase rate of evaporation...

..... which increase the rate of transpiration (water loss)

factor 2. .... Humidity .....

explanation

..... if the air is more humid there will be less water potential gradient between leaf and the air which [5] leads to less water evaporated from the leaf

- (b) Explain how the volume of water lost from branch B is at first greater, then less than that lost from branch C.

..... at first the humidity in P1 the line bog was low so

..... water rate of transpiration increases then the

..... humidity in P2 the line bog is as high so less transpiration [2]

- (c) Suggest why, even for certain plants that are poisonous to humans, the container in Fig. 3.1 can supply travellers with safe drinking water.

..... Because water is not moved from absorbed from the roots which doesn't contain poison and transported in xylem which only contain water and salts then evaporated from the leaf [3]

[Total: 10]

Fig. 1.2 shows a transverse section through a buttercup root at the end of the cold winter (W) and at the end of the warm, moist summer (S). At the end of the winter, the cells contain very few starch grains. At the end of the summer, most of the root cells contain many starch grains.

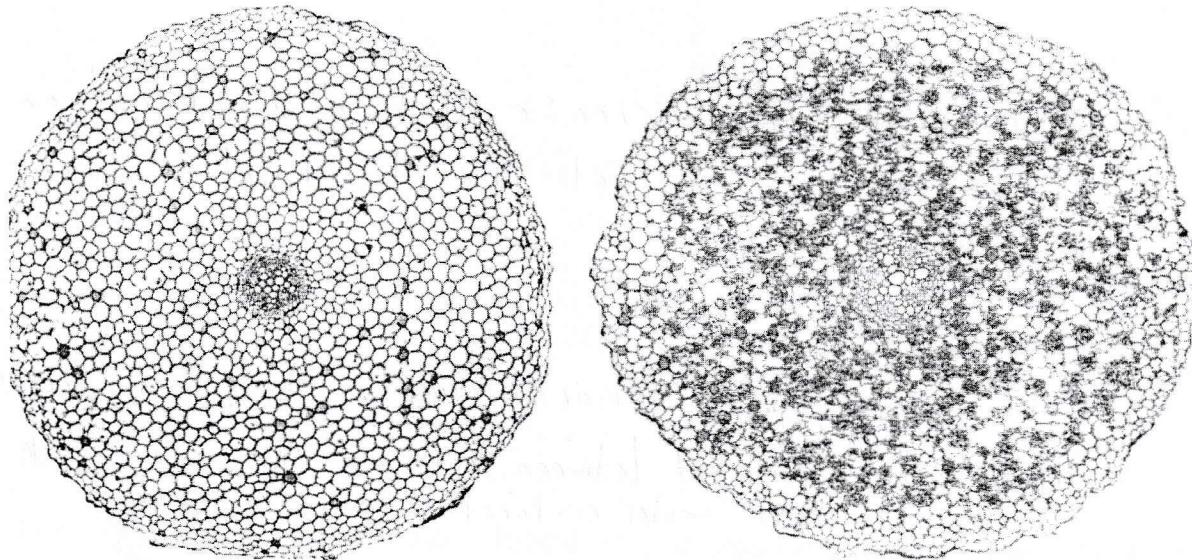


Fig. 1.2

- (b) Suggest why there are few starch grains in the cells of W compared with a large number of starch grains in the cells of S.

(i) In cold winter, there is no enough sunlight absorbed by chlorophyll and enzyme activity decrease due to low temperature so low rate of photosynthesis so less glucose made and less starch while in (S) there is sunlight and good temperature for enzyme activity so more <sup>rate</sup> of photosynthesis which leads to more glucose made and starch stored



Hydrophytes are plants that show many adaptive features for life in aquatic habitats.

Fig. 4.1 shows several species of hydrophyte growing in freshwater.

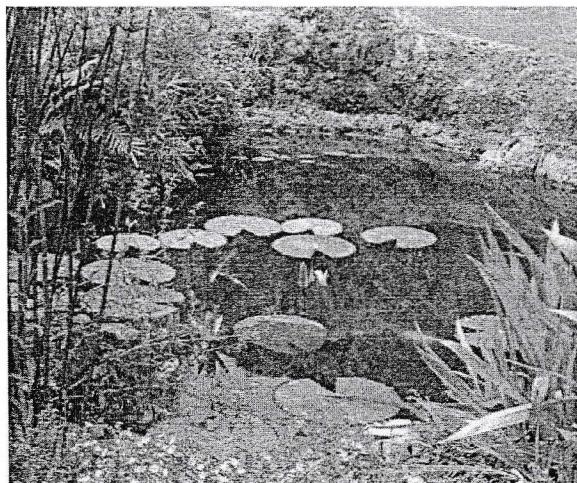


Fig. 4.1

A student investigated the density of stomata on the leaves of two different species of freshwater hydrophyte.

Table 4.1 shows the results.

Table 4.1

species	location of leaves	mean stomatal density/number per mm <sup>2</sup>	
		upper epidermis	lower epidermis
Brazilian waterweed, <i>Egeria densa</i>	under the surface of the water	0	0
water lily, <i>Nuphar lutea</i>	on the surface of the water	420	0

- (a) Name the epidermal cells that control the size of stomata.

.....Guard cells..... [1]

- (b) Suggest reasons for the difference between the results for the two species.

.....in the water lily in there were a lot of stomata in the upper epidermis to absorb gasses and co<sub>2</sub> from atmosphere and fill air spaces to float [1]

.....while in Brazilian water weed there were no stomata so no air enters the leaf and it stay under water [2]

- (c) Fig. 4.2 shows a section through the leaf of a water lily.

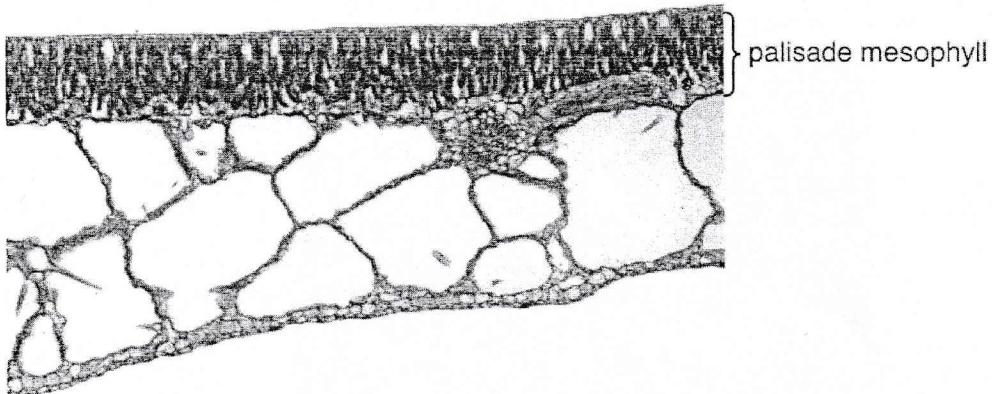


Fig. 4.2

- (i) State why the palisade mesophyll is a tissue.

Because it consists of many ~~Palisade~~ cells  
stick next to each other. [1]

- (ii) Name two other tissues that are present in the leaf in Fig. 4.2.

1 ..... vascular bundle .....  
2 ..... spongy mesophyll ..... [2]

- (d) The large air spaces are an adaptation of water lily leaves. Suggest why.

To store more air in air spaces  
for it to float and store more co<sub>2</sub>  
for higher rate of photosynthesis [2]

- (e) Hydrophytes are adapted to aquatic habitats.

State the name used for plants that are adapted to dry habitats.

~~Xerophytes~~ ..... ~~Xerophytes~~ ..... [1]