Plant Nutrition

Question Paper 1

Level	IGCSE
Subject	Biology
Exam Board	CIE
Topic	Plant Nutrition
Sub-Topic	
Paper Type	Alternative to Practical
Booklet	Question Paper 1

Time Allowed: **44 minutes**

Score: **/36**

Percentage: **/100**

1 Fig 3.1 shows one complete leaf from two different species of plant, **P** and **Q**.

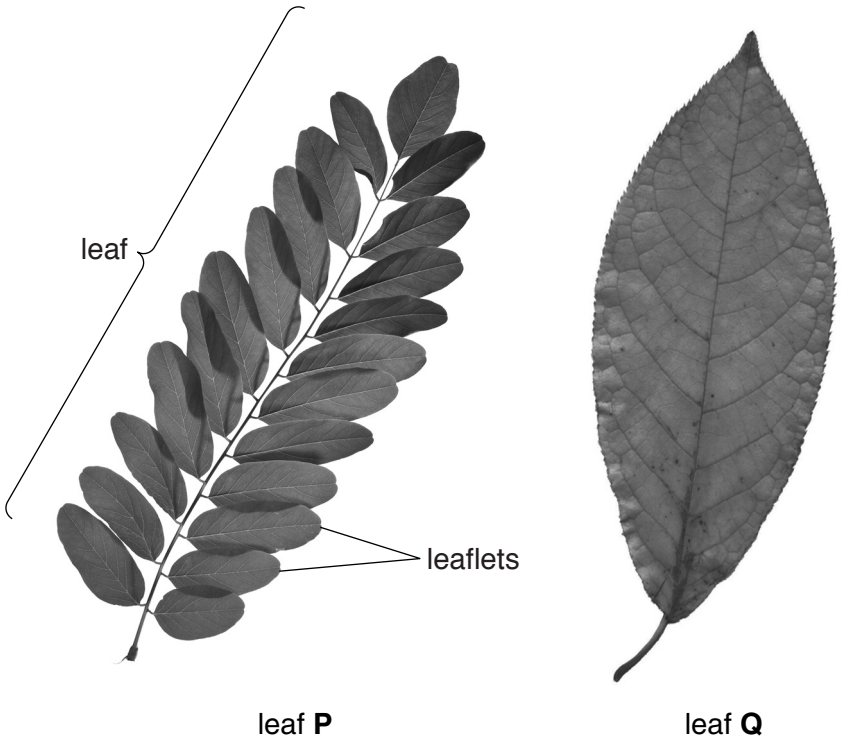

Fig. 3.1

(a) (i) State **two** features which are visible in **both** leaf **P** and leaf **Q**.

1 .....

2 .....

[2]

(ii) State **two** ways, other than size, in which leaf **P** differs from leaf **Q**.

1 .....

2 .....

[2]

(b) Fig. 3.2 shows part of a climbing plant.

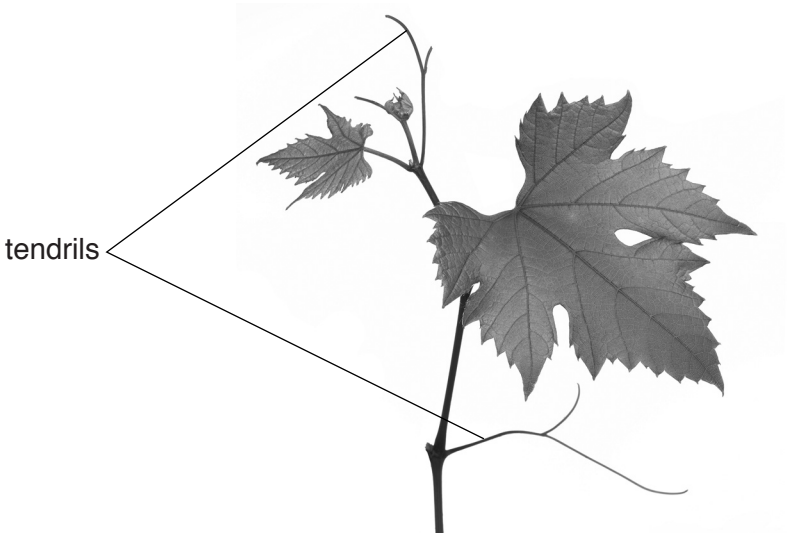

Fig. 3.2

(i) In the space below make a large drawing of the part of the climbing plant shown in Fig. 3.2.

[4]

(ii) Suggest **one** advantage and **one** disadvantage to the plant of having tendrils, as shown in Fig. 3.2.

advantage .....

.....

disadvantage .....

.....

[2]

(c) Fig. 3.3 shows a leaf of a monocotyledonous plant.

Fig. 3.3

The leaves shown in Fig 3.1 and Fig. 3.2 are all from eudicotyledonous (dicotyledonous) plants.

Complete Table 3.1 by stating **two** ways in which the leaves shown in Fig. 3.1 and Fig. 3.2 differ from the leaf of a monocotyledonous plant, shown in Fig. 3.3.

Table 3.1.

feature	eudicotyledonous	monocotyledonous

[3]

[Total: 13]

2 Fig. 2.1 shows two leaves, **R** and **S**, from different plants.

R **S**

actual size

Fig. 2.1

(a) **(i)** Make a large drawing of **R** to show:

- the shape of the leaf
- the arrangement of the veins in the leaf.

Label the main vein (midrib).

[4]

(ii) Draw a line across the widest part of **R** in Fig. 2.1. Measure, in millimetres, the distance and record your result. Include your units.

distance across the widest part of **R** .....

Draw a line across the widest part of your drawing, measure the distance (in millimetres) and record your result. Include your units.

distance across widest part of drawing of **R**.....[3]

(iii) Calculate the magnification of your drawing.

Show your working.

Give your answer to the nearest whole number.

magnification × .....[2]

(b) (i) Complete Table 2.1 by recording two **visible** differences, other than colour, between leaves **R** and **S**.

Table 2.1

R	S
1.....	....
2.....	....

[2]

(ii) State, with a reason, which of the leaves, **R** or **S**, is from a monocotyledon.

.....

.....[1]

(c) Some students were provided with two leaves, **V** and **W**, from different plants. In an investigation into water loss, the students recorded the mass of each of these leaves every 5 minutes for 60 minutes.

(i) The humidity did not change during the investigation.

State **two** other variables that should be kept constant during the investigation.

Describe how each variable could be kept constant.

1. variable .....

method of keeping constant .....

.....

2. variable .....

method of keeping constant .....

.....[4]

The results are shown in Table 2.2.

Table 2.2

time / min	mass of **V** / g	mass of **W** / g
0	5.2	7.5
5	4.8	7.2
10	4.0	6.5
15	5.5	6.0
20	3.2	5.5
25	2.9	5.1
30	2.8	4.3
35	2.7	4.0
40	2.4	3.6
45	2.2	3.2
50	1.8	3.0
55	1.8	2.9
60	1.8	2.7

(ii) The students assumed that the change in mass was due to water loss.

Describe how the students could show that **water** is lost from the leaves.

.....

.....

.....

.....

.....

.....[3]

(iii) Describe **two** similarities and **two** differences in the pattern of water loss of leaf **V** and leaf **W**.

similarities

1 .....

.....

2 .....

.....

differences

1 .....

.....

2 .....

.....[4]

[Total: 23]