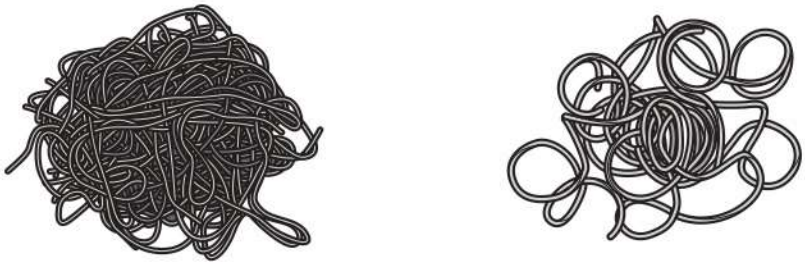
1 Fig. 1.1 shows some pasta noodles and some vegetable noodles.



pasta noodles vegetable noodles

Fig. 1.1

Table 1.1 compares the nutrients and energy listed on a packet of each type of noodles.

Table 1.1

nutrient	typical value in 100 g of pasta noodles	typical value in 100 g of vegetable noodles
carbohydrate (fibre)	31 g (1.3 g)	6.2 g (2 g)
protein	5.8 g	2.4 g
fat	0.9 g	0.6 g
calcium	7 mg	32 mg
vitamin C	0 mg	36 mg
iron	1.3 mg	0.7 mg
energy content	664 kJ	143 kJ

(a) Use the information in Table 1.1 to suggest why the vegetable noodles may be better than the pasta noodles at preventing scurvy.

.....

..... [1]

(b) A doctor advises an obese person to eat vegetable noodles rather than pasta noodles.

Use the information in Table 1.1 to explain why the doctor gives this advice.

.....

.....

.....

..... [2]

(c) State **one** nutrient shown in Table 1.1 that must be broken down by chemical digestion before it can be used in the body.

..... [1]

(d) Describe the importance of fibre in the diet.

.....

..... [1]

(e) The word equation for aerobic respiration is shown.

glucose + oxygen ⟶ carbon dioxide + water

(i) Describe how oxygen is transported by the blood.

.....

.....

..... [2]

2 Fig. 4.1 shows a cross-section of a leaf. Cells **P** and **Q** are examples of mesophyll cells in the leaf.

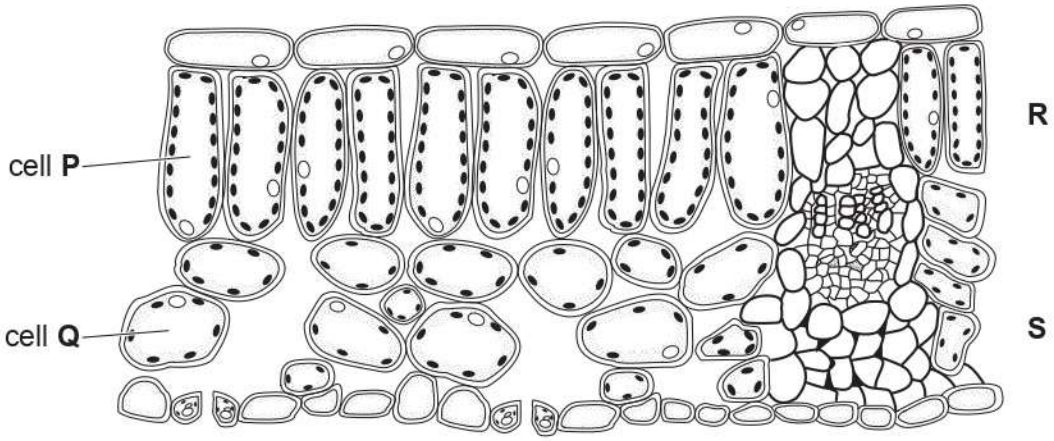


Fig. 4.1

(a) On Fig. 4.1 draw label lines from

1. **R** to the part of any cell which contains the genetic material,
2. **S** to a part of tissue that transports water.

[2]

(b) Cell **P** is able to carry out photosynthesis at a greater rate than cell **Q**.

Use evidence from Fig. 4.1 to support this statement referring to

(i) the position of cell **P** in the leaf compared with cell **Q**,

.....

.....[1]

(ii) the number of chloroplasts in cells **P** and **Q**.

.....

.....

.....[2]

(c) Describe in detail the function of chlorophyll in chloroplasts.

.....

.....

.....[2]

3 A student is investigating photosynthesis in an aquatic plant.

(a) Complete the balanced symbol equation for photosynthesis.

..... + ...CO_2 ⟶ ..... + ...O_2 [2]

(b) Fig. 7.1 shows the apparatus that the student uses in the investigation.

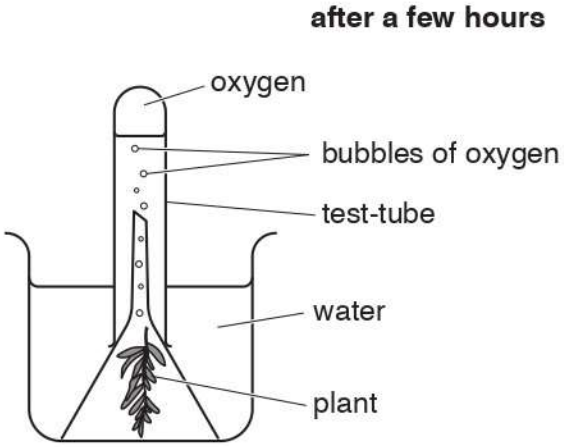


Fig. 7.1

The test-tube is full of water at the start. The apparatus is placed on a laboratory bench and left for a few hours.

Explain why the water in the test-tube moves downwards in the test-tube in Fig. 7.1.

.....

.....[1]

(c) The investigation is repeated in conditions of much greater light intensity.
The apparatus is left for the same length of time as before.

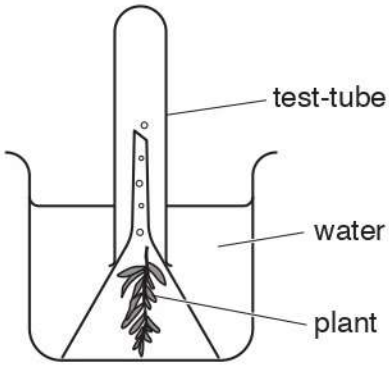


Fig. 7.2

(i) On Fig. 7.2 draw a line to suggest the new level of water in the test-tube. [1]

(ii) Explain your answer to **(c)(i)**.

.....

.....[1]