

GCSE Biology A (Gateway)

J247/01 B1-B3 and B7 Foundation (Foundation Tier)

Question Set 4

1 A student prepares onion cell slides to view under a microscope.

(a) Put the stages in the correct order by writing the numbers 1 to 5 in the boxes.

4	add a drop of iodine solution
1	cut the onion into pieces
2	peel off a thin layer of onion tissue
5	put on a cover slip
3	put the onion tissue on a slide

[2]

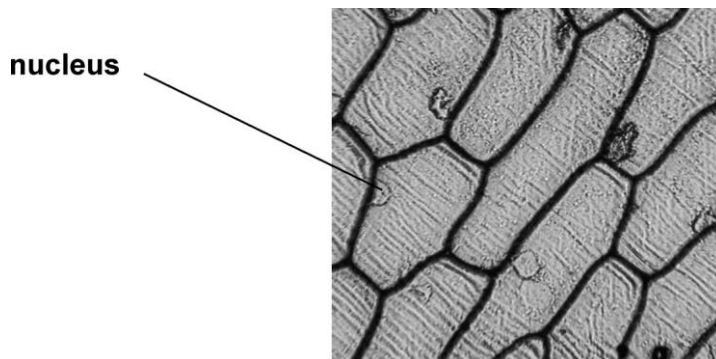
(b) Explain why the iodine solution is used.

[2]

The iodine solution is used as a stain so we can see the organelles.

Onion tissue contains starch granules, which are stained into blue black by iodine solution.

(c) (i) Look at the image of some onion cells.



Explain how the contents of the nucleus allow it to carry out its function.

[2]

The nucleus contains genes and DNA which help control the cells functions.

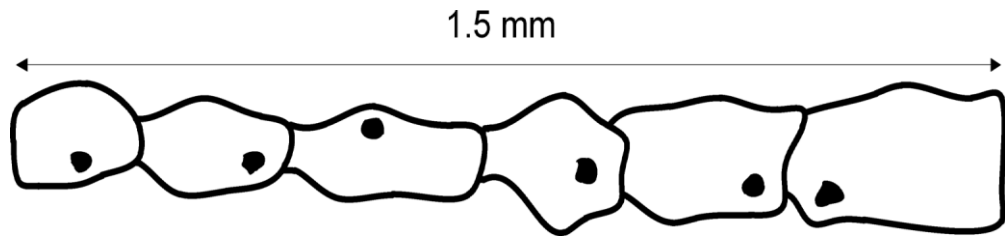
(ii) Explain why there are no chloroplasts in these onion cells.

[2]

This is because onion cells don't photosynthesise and this is because they are ^{located} underground.

(d)

The diagram shows a layer of onion cells.



The actual length of the layer is 1.5 mm.

$$\frac{1.5}{6} = 0.25 \text{ mm}$$

Calculate the average length of one onion cell.

[2]

Answer = 0.25 mm

(e)

A student thinks that using the highest magnification of a microscope is always best.

Explain why this may **not** be true.

[2]

It can be more difficult to focus because of small field of view.

Total Marks for Question Set 4: 12

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