

APOLLO

Cell structure

SL

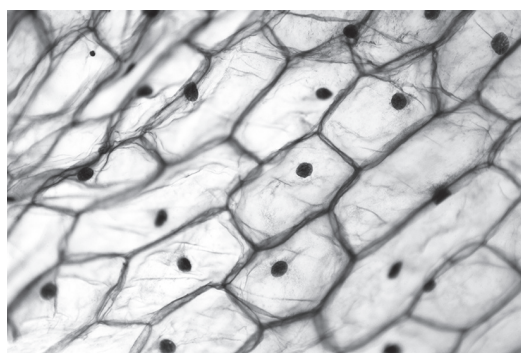
Biology

First assessment 2025

5 questions | questions

- 9.** Which cell organelle is common to all prokaryotic and eukaryotic cells?
- A. Nucleus
 - B. Cell wall
 - C. Vesicle
 - D. Ribosome

1. The image shows epidermis tissue from a bulb of the onion plant (*Allium cepa*) viewed using a light microscope.



50 μm

- (a) Calculate the magnification of the image.

[1]

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- (b) State the item of equipment that a student could use to accurately measure the length of an onion cell viewed using a light microscope.

[1]

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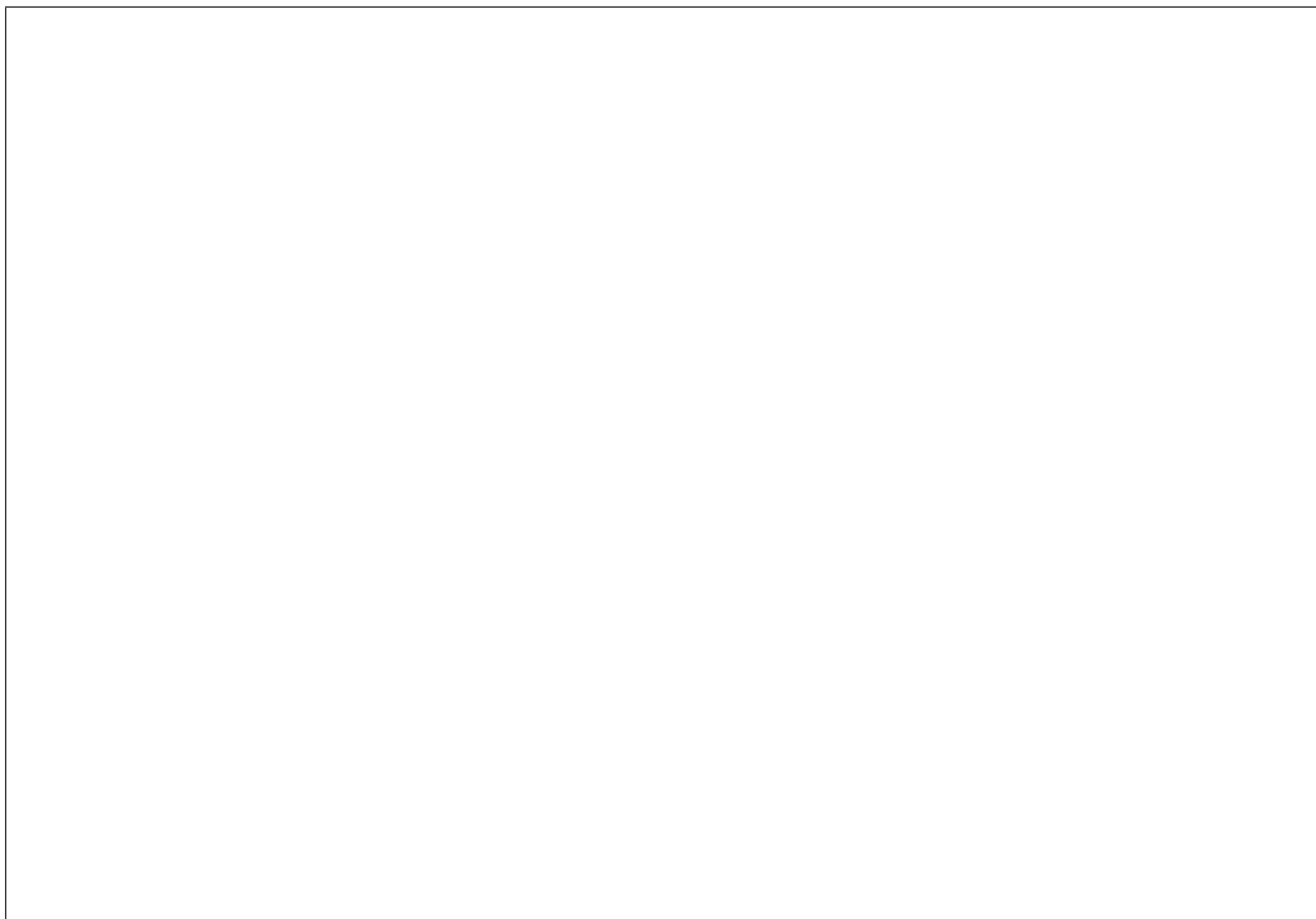
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(Question 1 continued)

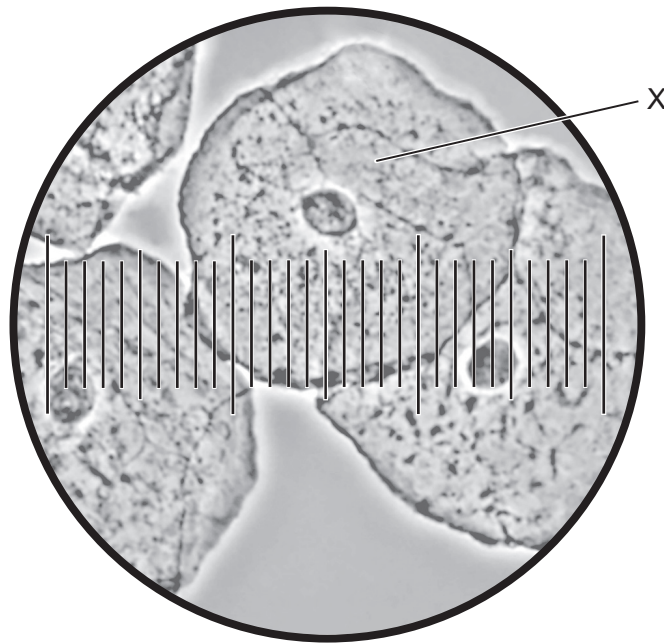
- (c) Draw a labelled diagram of a nucleus from a eukaryotic cell, such as an onion epidermis cell, as seen using an **electron** microscope.

[3]



Turn over

1. The micrograph is an image of human cheek cells viewed with a light microscope.



- (a) Identify the piece of equipment that is used together with the microscope to measure the size of the cells.

[1]

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- (b) Each small division of the scale in the micrograph is equivalent to $2.5\mu\text{m}$.

- (i) Calculate the diameter of the cell labelled X.

[1]

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(Question 1 continued)

(ii) Calculate the magnification of the image. [1]

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(c) Compare and contrast the cell components of eukaryotic and prokaryotic cells. [2]

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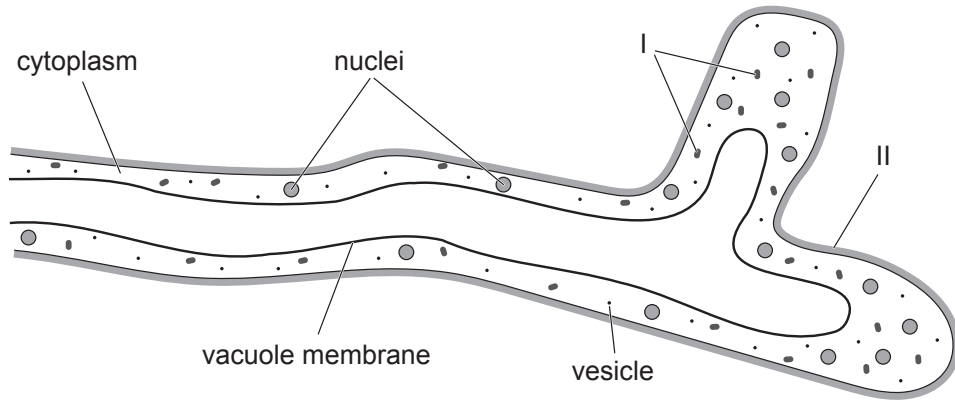


Turn over

Section A

Answer **all** questions. Answers must be written within the answer boxes provided.

3. The diagram shows the structure of part of a fungus.



- (a) The structures labelled I are membrane-bound organelles. Deduce, giving a reason, what these organelles could be.

[2]

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- (b) State with a reason whether the fungus is prokaryotic or eukaryotic.

[1]

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- (c) The structure labelled II is the outer part of the fungus. State the main component of this structure.

[1]

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(Question 3 continued)

(d) Identify **one** feature of the fungus that is atypical of cell structure. [1]

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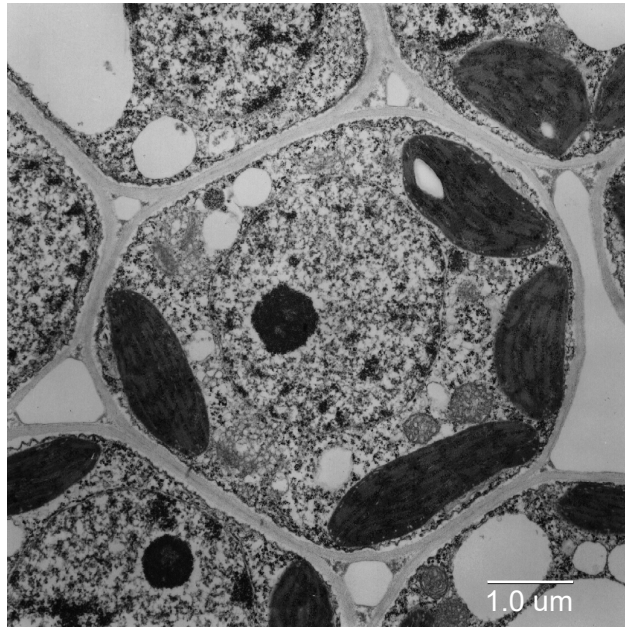
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(e) Water is the main component of vacuoles and cytoplasm in fungi. Draw a diagram to show the structure of a water molecule. [2]



11. What can be identified in the electron micrograph?



- A. Plant cells with cell walls, nuclei and chloroplasts
- B. Plant cells with chloroplasts and large central vacuoles containing nuclei
- C. Several prokaryotes with cell walls and cytoplasm
- D. Animal cells with prominent mitochondria

Turn over