

1.2 Cells: Origin & Ultrastructure

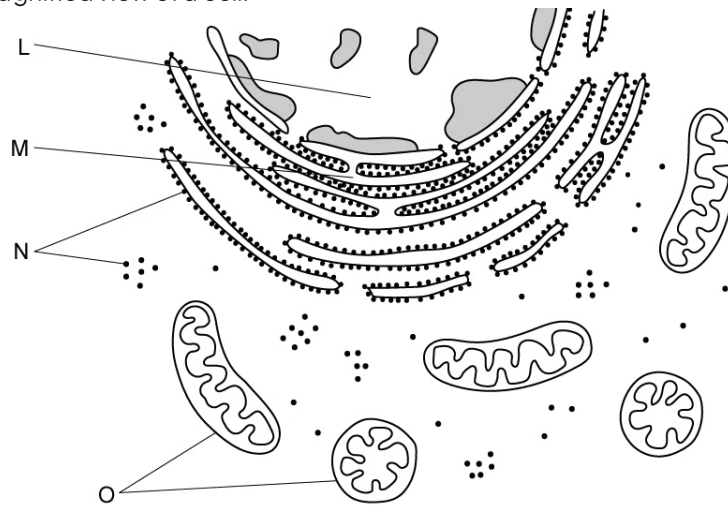
Question Paper

Course	DP IB Biology
Section	1. Cell Biology
Topic	1.2 Cells: Origin & Ultrastructure
Difficulty	Easy

Time allowed: 50
Score: /39
Percentage: /100

Question 1a

a)
The diagram below shows a magnified view of a cell.



List the names of the structures **L** and **N**.

[2 marks]

[2 marks]

Question 1b

b)
Another structure that would likely be present in the cell seen in part (a) is the golgi apparatus.

State the function of the golgi apparatus.

[1 mark]

[1 mark]

Question 1c

c)
State which type of cell (prokaryotic or eukaryotic) is featured in part (a).

[1 mark]

[1 mark]

Question 1d

d)

Scientists have established a theory that explains the origin of eukaryotic cells.

State the name of this theory.

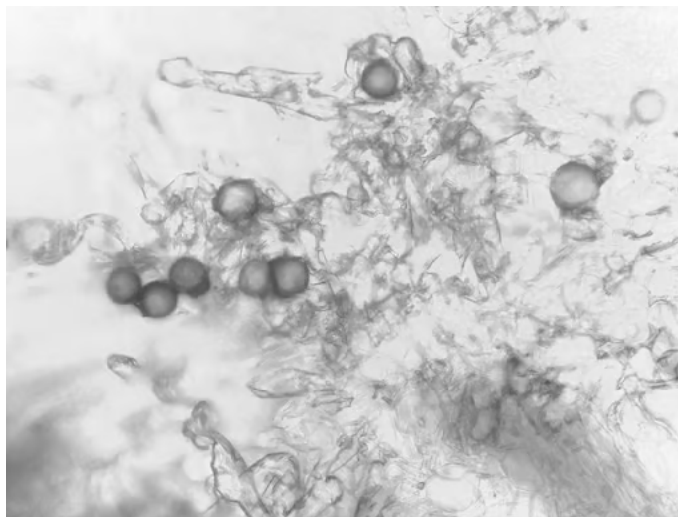
[1 mark]

[1 mark]

Question 2a

a)

The image below is of pollen grains taken under a light microscope.



[Source: By Ergriffi - Edit of File:Pollen grains on the surface of a stigma(Primula vulgaris).jpg, [https://commons.wikimedia.org/wiki/File:Pollen_grains_on_the_surface_of_a_stigma\(Primula_vulgaris\).jpg](https://commons.wikimedia.org/wiki/File:Pollen_grains_on_the_surface_of_a_stigma(Primula_vulgaris).jpg)]

State which type of microscope would enable scientists to examine the pollen grains in more detail.

[1 mark]

[1 mark]

Question 2b

b)

List **two** advantages of the electron microscope.

[2 marks]

[2 marks]

Question 2c

c)

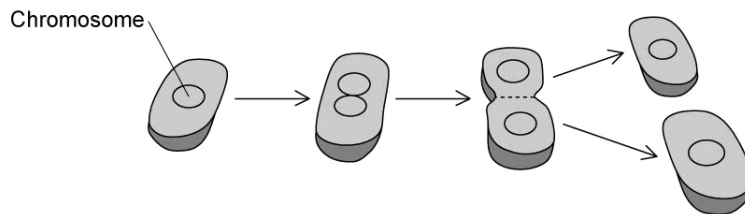
List three differences between prokaryotic and eukaryotic cells.

[3 marks]

[3 marks]

Question 2d

State the name of the type of asexual reproduction that the prokaryotic cell in the diagram below is undergoing.



[1 mark]

[1 mark]

Question 3a

a)

The first cells on Earth are thought to have arisen from non-living materials.

List **four** processes that scientists believe were required for the first cells to be formed.

[4 marks]

[4 marks]

Question 3b

b)

The improvements in scientific apparatus has led to developments in scientific research, including having a better understanding of the ultrastructure of cells.

State the piece of apparatus that enabled scientists to examine the ultrastructure of cells.

[1 mark]

[1 mark]

Question 3c

c)

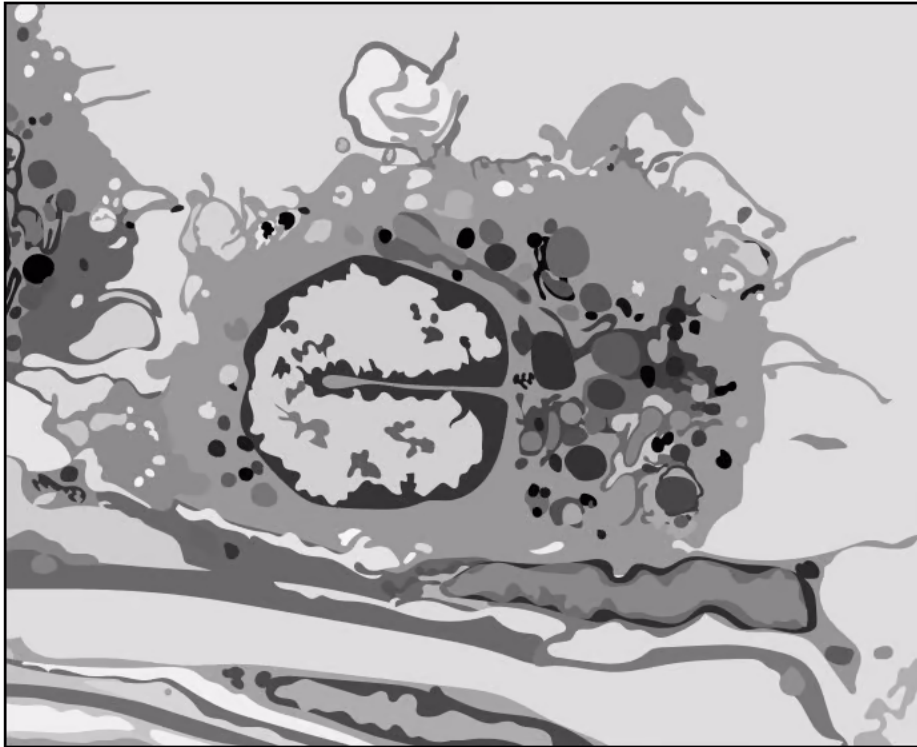
List **two** structures found in both prokaryotic and eukaryotic cells.

[2 marks]

[2 marks]

Question 4a

- a)
Outline, with a reason, the function of the specialised cell shown below.



[3 marks]

[3 marks]

Question 4b

b)

State which cell structure is shown below.

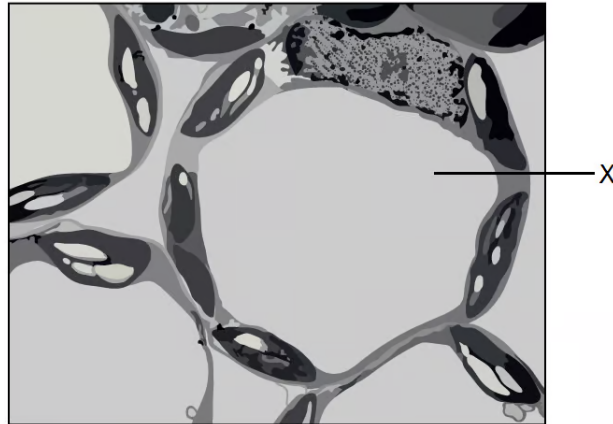


[1 mark]

[1 mark]

Question 4c

c)
State the name the structure labelled X.



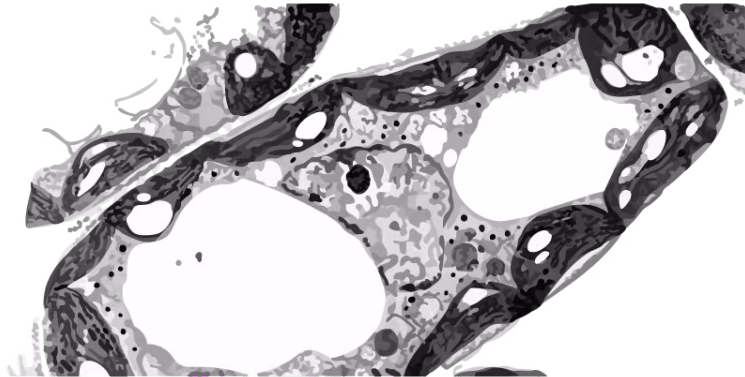
[1 mark]

[1 mark]

Question 5a

One mark is available for clarity of communication throughout this question.

a)
The diagram below shows an electron micrograph of a palisade mesophyll cell.



Draw a labelled diagram of this cell.

[5 marks]

[5 marks]

Question 5b

b)

Outline the evidence scientists have provided to explain the origin of eukaryotic cells.

[4 marks]**[4 marks]****Question 5c**

c)

Outline the experiment used by Pasteur to demonstrate cells only come from pre-existing cells.

[6 marks]**[6 marks]**

