

GCSE Biology (9 – 1)

Cell Structure and Function

Name:

Group:

Instructions

- Read each question carefully before you begin to answer it.
- Use black ink or black ball-point pen for your answers.
- Fill in the boxes at the top of this page with your name and group.
- Attempt to answer every question in the booklet.
- Answer the questions in the spaces provided – there may be more space than you need in some answer spaces.
- Calculators may be used for this booklet.
- For any calculations, you **must** show all your working.
- Any and all drawings or graphs should be completed in pencil.



For markers use	
Question	Mark
1	/4
2	/10
3	/3
4	/3
5	/6
6	/8
7	/6
8	/6
9	/4
Total	/50
%	
Grade	

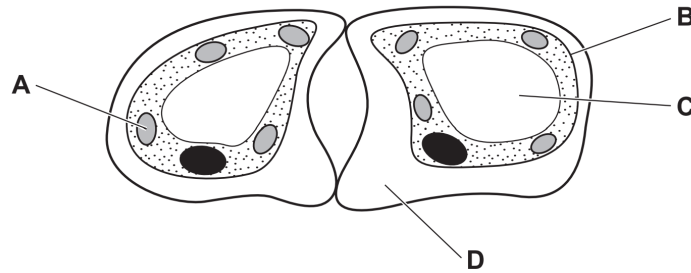
Information

- The maximum mark for this paper is 50 marks.
- The marks for each question are shown in brackets.
- Please be aware that good English and clear presentation are required in your answers.



1. The following questions explore aspects of cell structure, function, and processes. Answer each part by selecting the correct answer from the options.

- a) The figure below shows two guard cells in the lower epidermis of a plant leaf. Which label, A, B, C or D shows the **cell wall**? Circle the letter of the correct answer.



(1 mark)

- b) Root hair cells are located on plant roots. Which feature from the options below is found in a root hair cell but **not** in a sperm cell. Circle the letter of the correct answer.

A – Cell wall

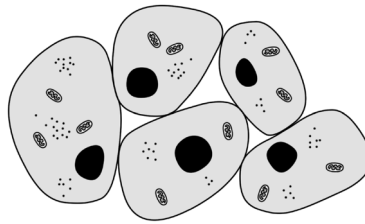
B – Chloroplast

C – Cell membrane

D – A nucleus

(1 mark)

- c) The figure below shows some kidney cells as they appear under a microscope. How many **cell walls** are visible? Circle the letter of the correct answer.



A – 5

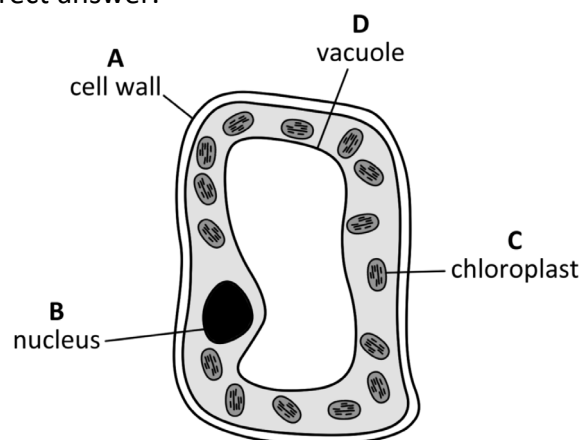
B – 0

C – 10

D – 15

(1 mark)

- d) The figure below shows a typical plant cell. In which labelled part is glucose made? Circle the letter of the correct answer.



A

B

C

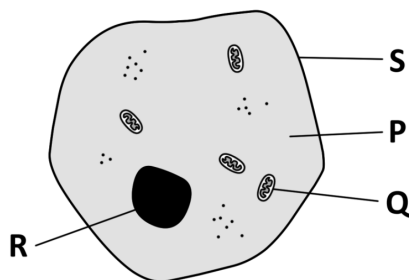
D

(1 mark)

(Total for Question 1 is 4 marks)

2. The figure below shows a typical animal cell.

a) Identify the parts labelled S, P, Q and R.



S = ...

P = ...

Q = ...

R = ...

(4 marks)

b) Identify **two** structures that would be present in plant cells but that are absent from animal cells.

.....

(2 marks)

c) Identify **two** structures that are present in bacterial cells but would be absent from animal cells.

.....

(2 marks)

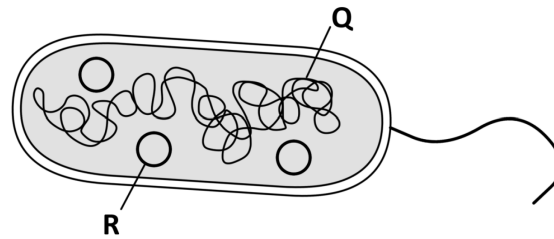
d) Cells can be specialised to perform a specific function in the body. Complete the activity below by drawing four lines to match the specialised cell to its function. One line has been drawn for you.

specialised cells	functions
palisade mesophyll cell	transport of oxygen
root hair cell	conduction and support
ciliated cell	absorption of water
neurone	photosynthesis
red blood cell	movement of mucus
	conduction of impulses

(2 marks)

(Total for Question 2 is 10 marks)

3. The figure below shows a typical bacterial cell.



a) Identify the parts labelled Q and R in the figure.

Q = ...

R = ...

(2 marks)

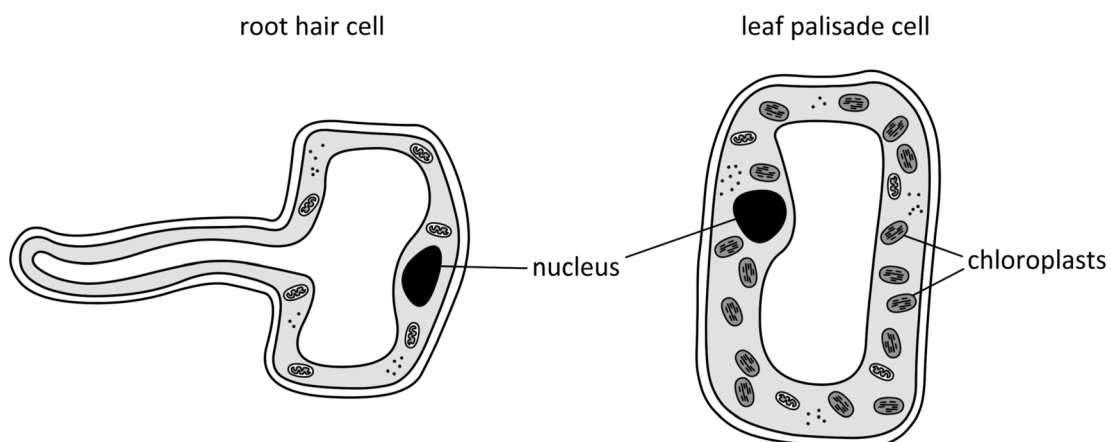
b) Bacterial cells have cell walls to provide the cell with structure and support.
What **substance** is used to form bacterial cell walls?

.....

(1 mark)

(Total for Question 3 is 3 marks)

4. The diagrams show two cells taken from a plant.



a) Root hair cells take up water by which process?

Circle the letter of the correct answer.

A – Mitosis

B – Diffusion

C – Active transport

D – Osmosis

(1 mark)

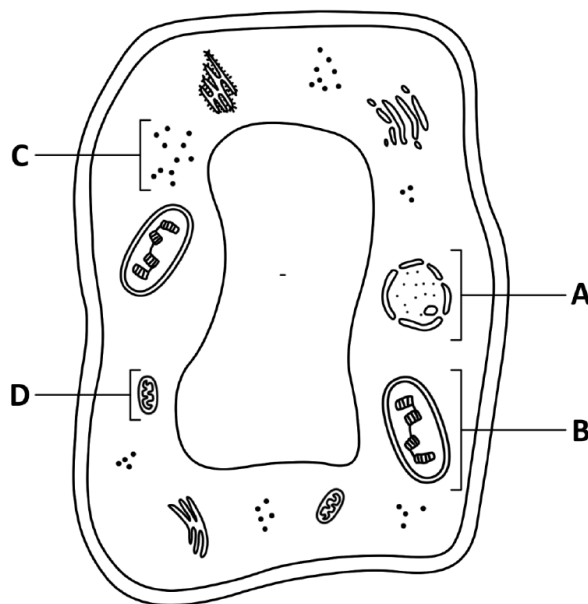
b) Describe the function of the chloroplasts in a leaf cell.

.....
.....
.....

(2 marks)

(Total for Question 4 is 3 marks)

5. A biologist was using an electron microscope to study plant cells. The figure below shows the plant cell the biologist was studying.



- a) Identify the cell structures labelled A and B.

A = ...

B = ...

(2 marks)

- b) State the functions of the structures labelled C and D.

.....

.....

.....

.....

.....

.....

(2 marks)

- c) The cell in the figure above is a eukaryote.
Describe **two** differences between a eukaryotic and prokaryotic cell?

.....

.....

.....

.....

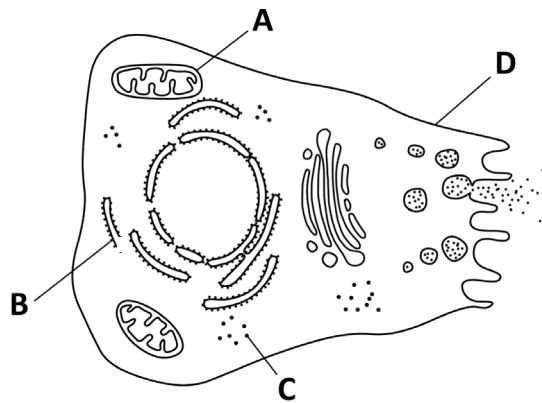
.....

.....

(2 marks)

(Total for Question 5 is 6 marks)

6. The figure below shows the structure of an animal cell.



a) Identify the cell structures labelled A, B, C and D.

A = ...

B = ...

C = ...

D = ...

(4 marks)

b) State the functions of the structures labelled A, B, C and D.

.....

.....

.....

.....

.....

.....

.....

.....

.....

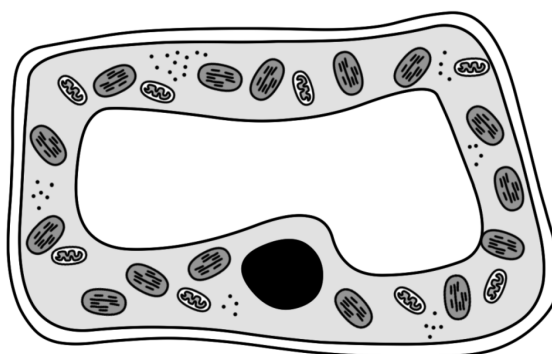
.....

.....

(4 marks)

(Total for Question 6 is 8 marks)

7. The diagram shows a cell from the leaf of a plant.



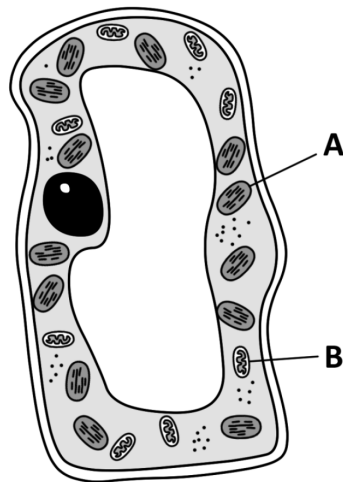
Describe the role of **each** of the structures in this plant cell.

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting or typing. There are no margins, text, or other markings on the page.

(6 marks)

(Total for Question 7 is 6 marks)

8. The figure below shows a eukaryotic cell.
The structures A and B are found in the leaf cells of a plant.



- a) Identify the cell structures labelled A and B.

A = ...

B = ...

(2 marks)

- b) Give the function of structure B.

.....
.....
.....

(1 mark)

- c) Describe how a prokaryotic cell would differ from the cell in the figure above.

.....
.....
.....
.....
.....
.....

(2 marks)

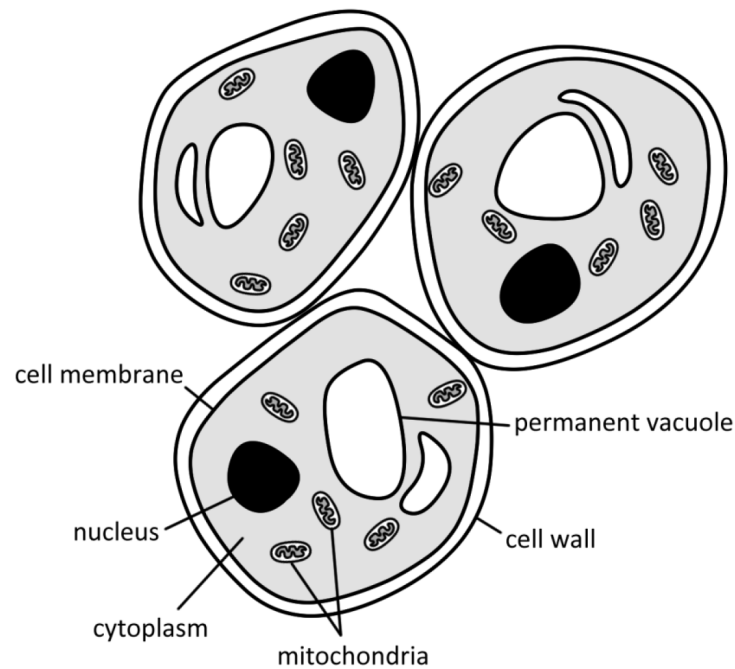
- d) Give an example of a prokaryotic cell.

.....

(1 mark)

(Total for Question 8 is 6 marks)

9. The figure below shows a number of typical fungal cells.



a) In terms of **cells walls**, describe the difference between a typical fungal cell and a typical bacterial cell.

.....

.....

.....

.....

.....

.....

(2 marks)

b) Fungal cells are capable of both aerobic and anaerobic respiration.

Which organelle in a fungal cell is the site of aerobic respiration?

.....

.....

(1 mark)

c) Fungal cells contain permanent vacuoles.

What is the function of these permanent vacuoles?

.....

.....

(1 mark)

(Total for Question 9 is 4 marks)