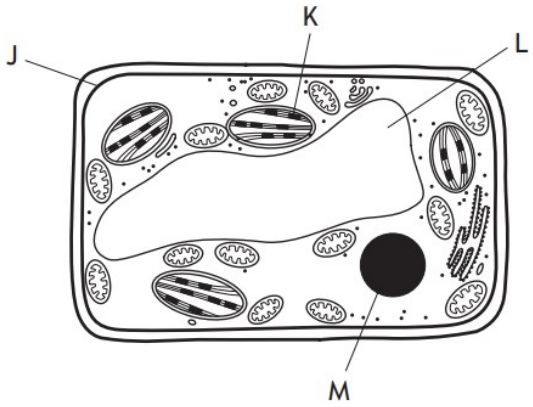
Cells Ultra structure

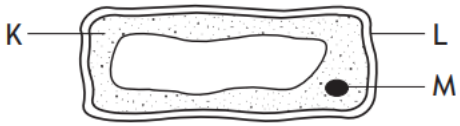
1. The diagram shows a typical plant cell.



Which of the labelled structures would also be found in a typical animal cell?

A J and K only
B J and M only
C L and K only
D L and M only

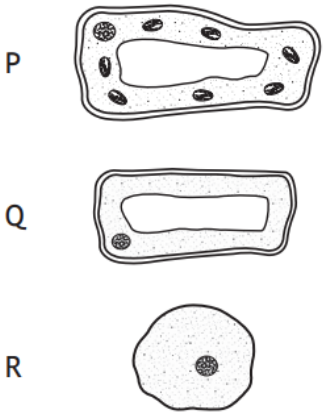
2. The diagram represents a typical plant cell.



Which of the labelled parts could also be found in a typical fungal cell?

A L and M
B K and M
C K and L
D K, L and M

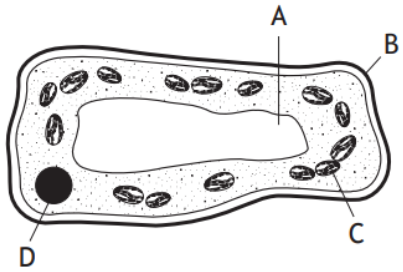
3. The following diagrams represent three different cells.



Identify the plant cell(s).

A P and R only
B P and Q only
C P only
D R only

4. The diagram below shows parts of a plant cell.



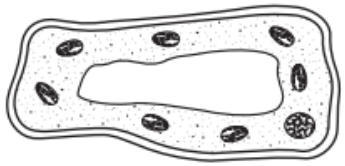
Which part of this cell is composed of cellulose?

Cells Ultra structure

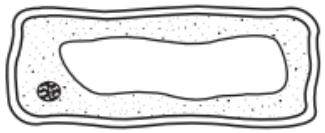
5. The diagrams below show four cells.

Which cell is a leaf mesophyll cell?

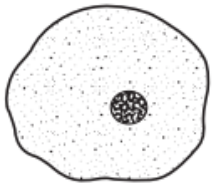
A



B



C



D

6. Which structural feature is found in a plant cell and not in an animal cell?

A Nucleus

B Cell wall

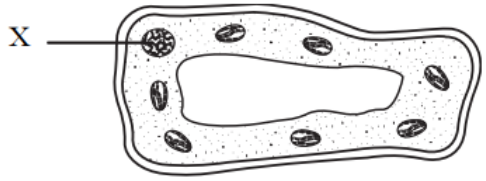
C Cell membrane

D Cytoplasm

7. Which line in the table below correctly matches the plant cell structure to its function?

	Plant cell structure	*Function*
A	Cytoplasm	Controls all the chemical activities
B	Cell wall	Keeps the cells turgid
C	Vacuole	Prevents the cell from bursting in a hypotonic solution
D	Cell membrane	Controls which molecules enter or leave the cell

8. The diagram below shows a cell.



The function of structure X is to

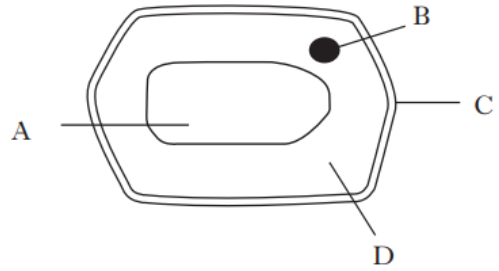
A control cell activities

B keep the cell turgid

C control entry and exit of material

D release energy from glucose.

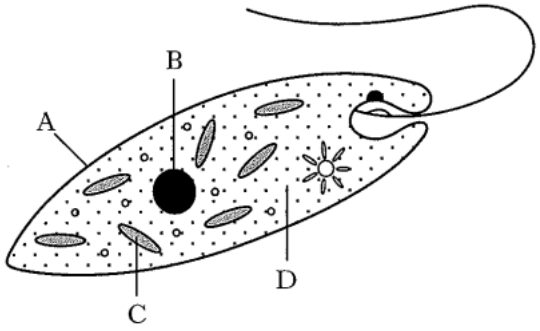
The diagram refers to Q & Q



9. Which of the plant cell components shown above is made from a structural carbohydrate?

10. Which labelled part controls cell activities?

11. The diagram below represents a unicellular organism.



Which part indicates this is a plant cell?

Cells Ultra structure

12. Which structural feature is common to both plant and animal cells?

A Cell wall

B Chloroplast

C Nucleus

D Large central vacuole

13. Which carbohydrate is a component of cell walls?

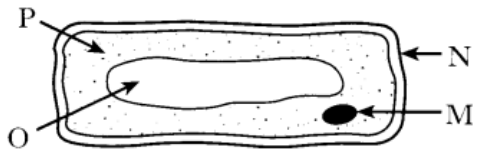
A Glycogen

B Starch

C Cellulose

D Glucose

14. The diagram below represents a plant cell.



Which of the labelled parts of the cell are also found in an animal cell?

A M and N

B N and O

C M and P

D M, N, O and P

15. Identify the structure where enzymes (proteins) are produced.

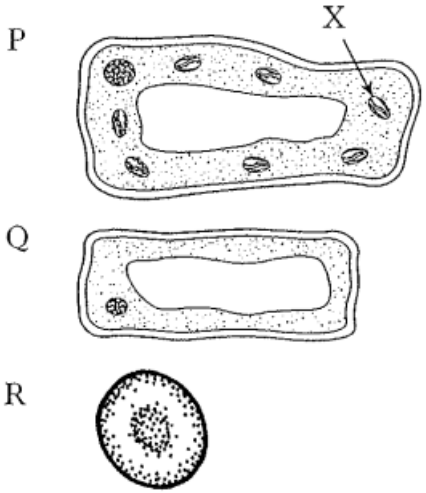
A Mitochondrion

B Nucleus

C Ribosome

D Cell membrane

16. The diagram refers to Q 16



The function of structure X is to

A control all cell activities

B keep the cell turgid

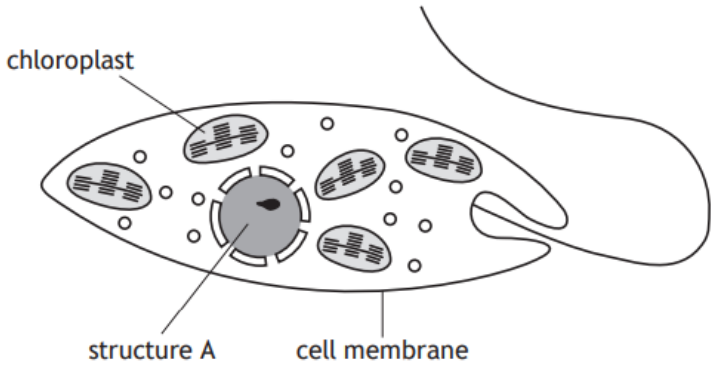
C produce glucose using light energy

D release energy from glucose.

Cells Ultra structure

1. Euglena is a single celled organism found in water.

The diagram shows some of the structures within Euglena.



(a) (i) Name structure A. 1

_____

(ii) Give the function of a chloroplast. 1

_____

(b) Suggest why Euglena is **not** a typical plant cell. 1

_____

_____

2. Give **one** difference and **one** similarity in the structure of plant and animal cells.

Difference _____

_____ 1

Similarity _____

_____ 1

3. Cells vary in their size and structure.

Both bacterial and fungal cells have a cell wall.

(i) Name one other structure that can be found in both bacterial and fungal cells. 1

_____

(ii) Plant cells also have a cell wall.

Name the material that plant cell walls are made of. 1

_____

(iii) Apart from the difference in size, give one other difference between typical bacterial and plant cells. 1

_____

_____

4. The list gives four types of cells.

Bacteria Fungus Animal Plant

(i) Cell membranes are found in all of these cell types.

Describe the function of the cell membrane. 1

_____

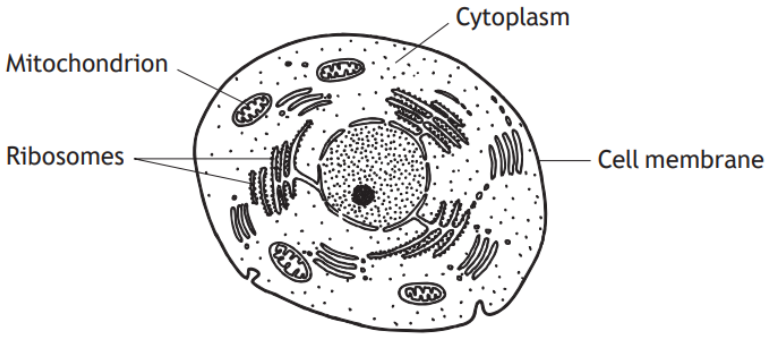
_____

(ii) Name **one** other structure that is also present in all of these cells. 1

_____

Cells Ultra structure

5. The diagram shows a typical animal cell and some of its structures.



Choose **two** of the structures labelled and state their functions. **2**

1 Structure _____

Function _____

_____

2 Structure _____

Function _____

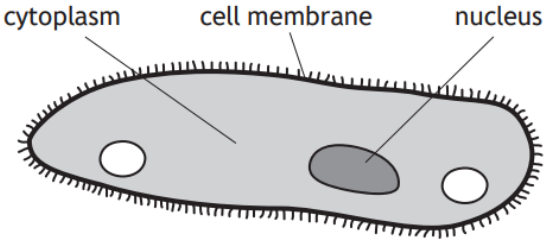
_____

6. Tick (✓) boxes to show those structures which are found in animal cells.

Chloroplasts	☐
Cytoplasm	☐
Large central vacuole	☐
Cell wall	☐
Nucleus	☐
Cell membrane	☐

7. *Paramecium* is a single-celled organism which lives in fresh water.

The following diagram shows some of its structures.



(i) Choose one of the following structures by ticking (✓) one of the boxes and describe its function. **1**

Cytoplasm ☐ Cell membrane ☐ Nucleus ☐

Function _____

_____

8. Complete the table by using all the letters from the list to identify the parts found in each type of cell.

Each part may be used **once** or **more than once**.

Parts of cells

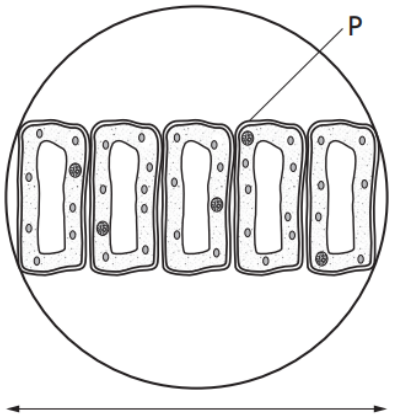
A cell membrane
B cell wall
C chloroplast
D cytoplasm
E nucleus

Leaf cell	*Cheek cell*

Cells Ultra structure

9. Palisade mesophyll cells are found in leaves and carry out photosynthesis.

The diagram shows a layer of these cells viewed under a microscope.



(a) (i) Name structure P.

_____

(b) Describe the difference that would be found in the ultrastructure of plant cells that do not carry out photosynthesis.

_____

1

10. Which part of the cell controls the passage of substances into or out of the cell?

_____

1

11 The diagram shows a typical green plant cell and some of its structures.

(a) (i) Using a letter from the diagram, identify one structure that would also be found in an animal cell. **1**

Letter _____

(ii) Choose one structure labelled in the diagram and state its function. **1**

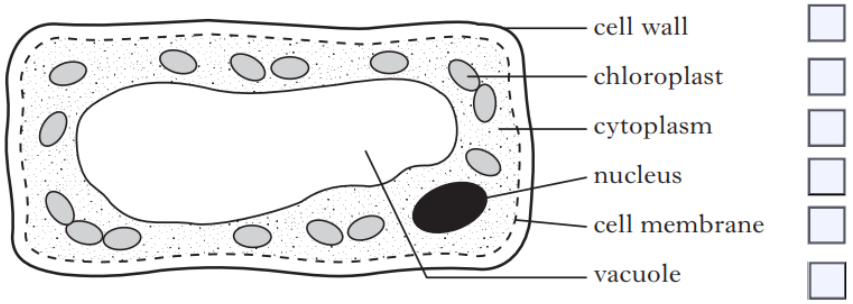
Letter _____

Function _____

_____

Marks

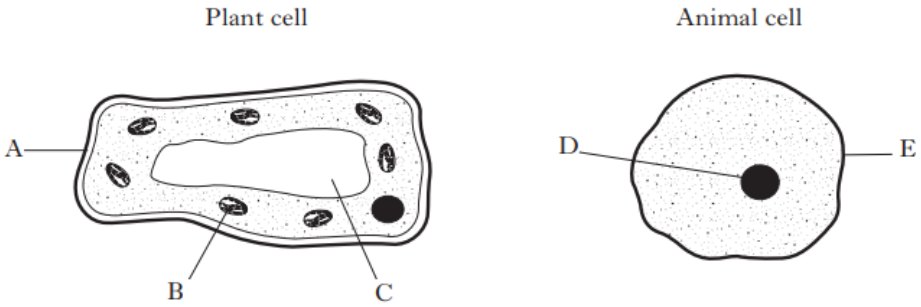
12 . The diagram shows some of the structures found in a typical plant cell.



(a) Tick the boxes to show the structures that are also found in a typical animal cell. **2**

Cells Ultra structure

11. The diagrams below show two cells.



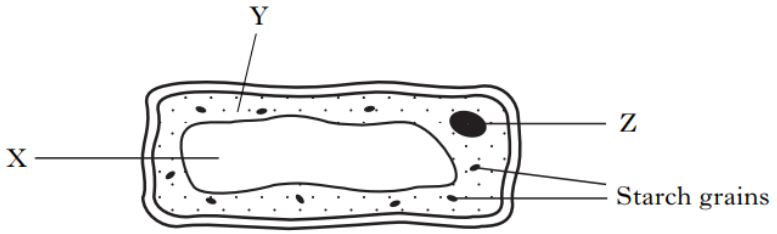
Complete the table below to show the names and functions of some of the labelled parts.

Part	*Name*	*Function*
B	chloroplast	
C		contains cell sap
E	cell membrane	

12. State a feature of the cell membrane which allows the movement of only some substances into the cell.

_____

13. The diagram below represents a potato cell.



(i) Name the parts of the cell labelled X and Y.

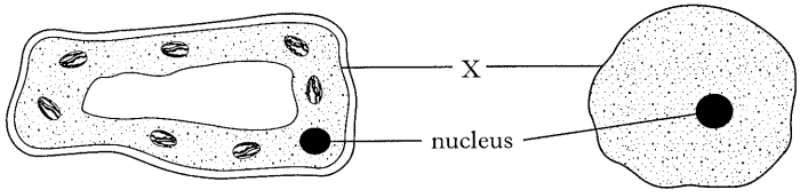
X _____

Y _____ **1**

(ii) Give the function of structure Z.

_____ **1**

14. The diagram below shows a plant cell and an animal cell.



(i) Identify structure X.

_____ **1**

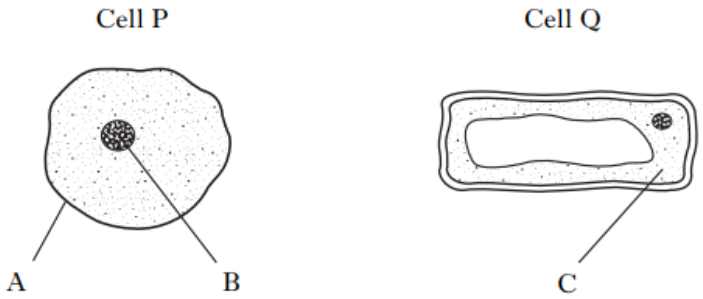
(ii) Give a function of the nucleus.

_____

_____ **1**

Cells Ultra structure

15. The diagram below shows two cells P and Q.



(i) Complete the table below to give the name and function of the parts labelled A, B and C.

Letter	*Part*	*Function*
A	cell membrane	
B	nucleus	
C		Where all chemical reactions occur

2

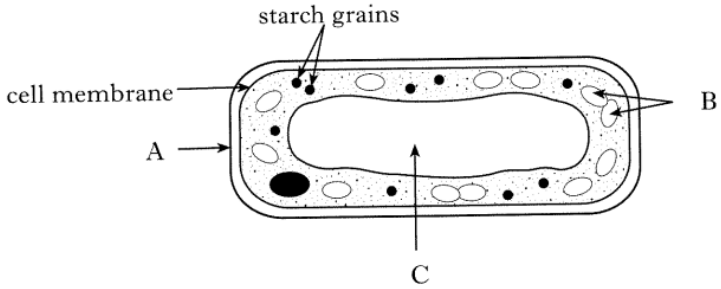
(ii) Which cell is a plant cell? Give a reason for your choice.

Cell _____

Reason _____

1

16. The diagram below shows a cell from the leaf of a green plant.

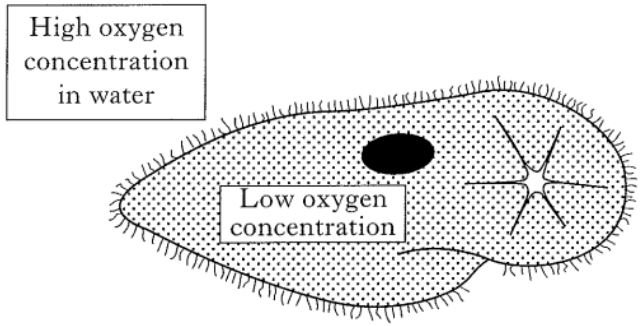


(*a*) Complete the table with the names of the parts shown in the diagram.

Letter	*Cell part*
A	
B	
C	

1

17. The diagram below shows the unicellular organism *Paramecium* which lives in freshwater.

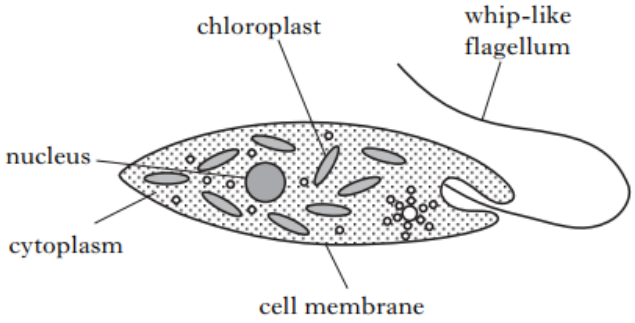


Name the cell structure which controls the entry and exit of materials.

_____

Cells Ultra structure

18 a)) *Euglena* is a single celled organism.
The diagram below shows some of the structures within *Euglena*.



(i) *Euglena* has structures found in most cells.

Complete the table below to show the names of these structures and their functions.

Structure	*Function*
	controls the entry and exit of materials
Cytoplasm	
Nucleus	

2

(ii) Name the structure that identifies *Euglena* as a plant cell.

_____

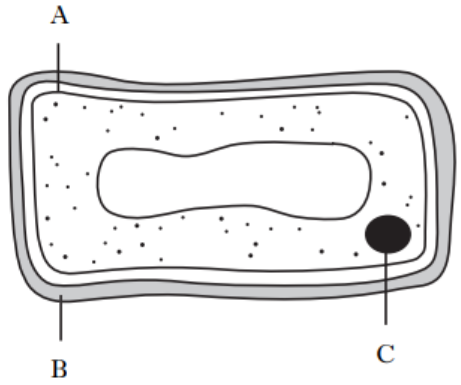
1

(*b*) Most plant cells have a cell wall.
Name the structural carbohydrate in the cell wall.

_____

1

19 (*a*) The diagram represents a section through a leaf cell.



Complete the table to show the name and function of the structures labelled.

Letter	*Name of structure*	*Function*
A	cell membrane	
B		gives shape and support
C	nucleus	

2

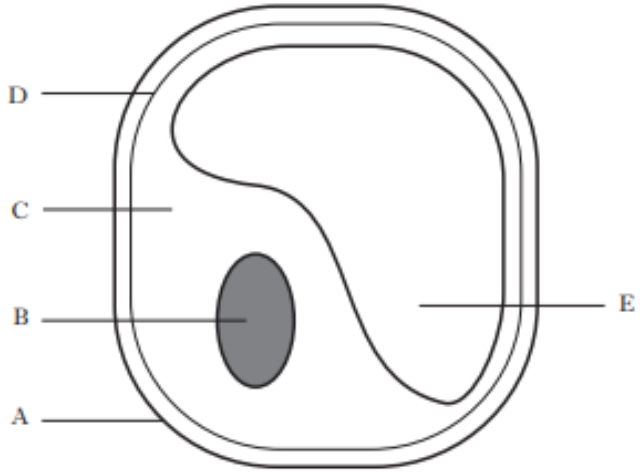
(*b*) Name a structure, present in plant cells, which is absent from animal cells.

_____

1

Cells Ultra structure

20. The diagram below represents a plant cell.



(*a*) Complete the table below to identify the part, the cell structures and function.

Part	*Cell structure*	*Function*
	cell membrane	controls entry and exit of materials
E		stores cell sap
B		

(*b*) Using evidence from the diagram, explain why this cell is more likely to be a root cell than a leaf mesophyll cell.

_____

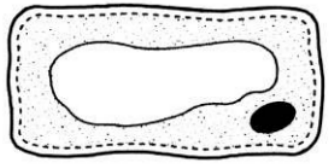
_____ **1**

(*c*) Name the structural carbohydrate that is found in cell walls.

_____ **1**

21. (i) The diagrams below represent two cells.

Onion root cell



Human cheek cell

Name **three** structures, or parts, shown to be present in **both** cells.

_____

_____

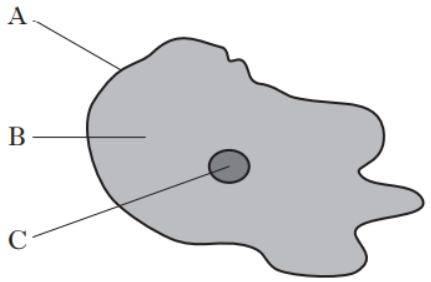
_____ **2**

(ii) Name a structure which would be found in a green leaf cell of a plant, but **not** in a root cell.

_____ **1**

22 The diagram below represents a single-celled organism called *Amoeba*. This organism carries out respiration to provide energy for cellular activities.

2

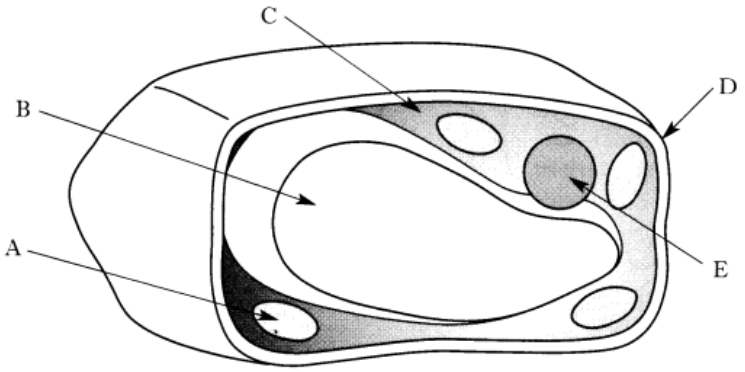


State which letter in the diagram shows the cytoplasm.

_____ **1**

Cells Ultra structure

23. The diagram below shows a section through a plant cell.



(*a*) (i) Which **two** letters identify structures found in both plant and animal cells?

_____

_____ **1**

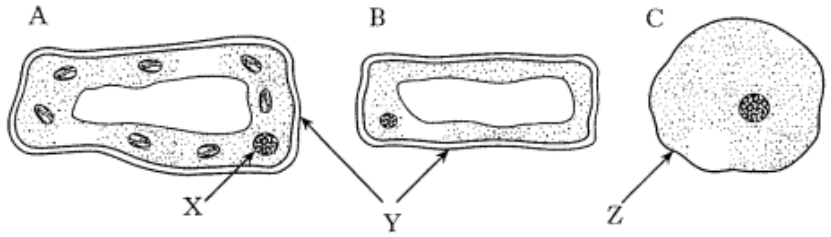
(ii) Name the enzyme-controlled process associated with structure A.

_____ **1**

(*b*) Name a molecule found in structure E which is composed of a sequence of bases.

_____ **1**

24. The diagrams below show sections of three different cell types.
They are not drawn to the same scale.



(i) Complete the table below to show the name and function of the parts labelled X, Y and Z.

Part of cell	*Name*	*Function*
X		
Y		
Z		

2

(ii) Cells A and B are plant cells and cell C is an animal cell.
Describe **two** features, shown in the diagrams, that support this statement.

_____

_____ **2**

Cells Ultra structure

25. A group of students carried out an investigation into the variety of cell types.

The types of cell they examined are shown in the box below.

Animal	Plant	Bacterial	Fungal

(a) (i) Identify the type(s) of cell which have a cell wall. **1**

_____

(ii) Identify the type(s) of cell which have a plasmid. **1**

_____

(iii) Some organelles are found in all cells.

Choose one of the following organelles and tick (✓) the appropriate box.

Describe the function of the chosen organelle. **1**

Ribosome ☐ Mitochondria ☐

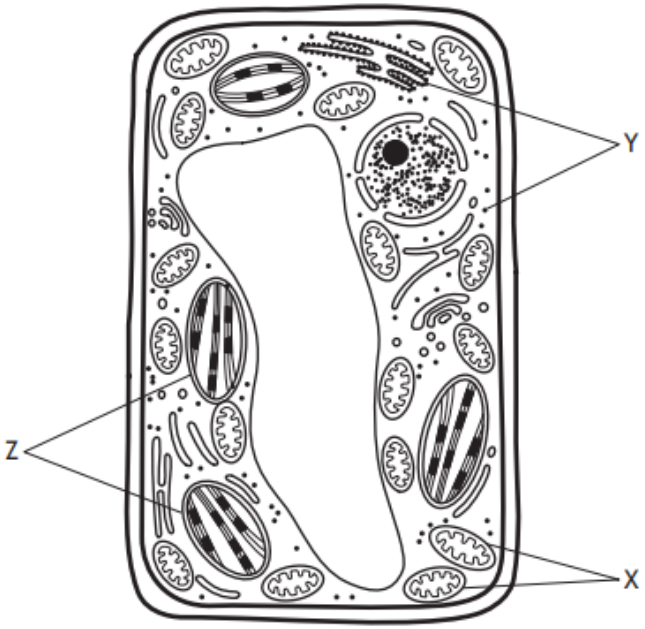
Function _____

_____

26. A variegated leaf contains green areas and white areas.

A student investigated cells from both areas.

One of these cells is shown.



(a) Which letter identifies ribosomes? **1**

_____

(b) Give the evidence from the diagram which suggests that this cell produces large quantities of ATP. **1**

_____

(c) The student concluded that this cell is from the green area. Explain why this conclusion is correct. **2**

_____

_____

Cells Ultra structure

26. The grid below refers to cell structures.

A cell	B cytoplasm	C cell wall
D nucleus	E chloroplast	F vacuole

Answer the following questions using the grid above

a) Where chemical reactions occur in the cell.

_____

b) A part found in a leaf mesophyll cell but not a yeast cell.

_____

c) The part (s) in common between animal and fungal cells.

_____

d) Where cell sap is stored.

_____

Cells Ultra structure Answers

1. B
2. D
3. B
4. B
5. A
6. B
7. D
8. A
9. C
10. B
11. C
12. C
13. C
14. C
15. C
16. C

1. A (I) nucleus (ii) site of photosynthesis
   B does not have a cell wall/vacuole

2. Difference
   Only plant cells have a chloroplast/vacuole /cell wall

   Similarity
   Both have a nucleus/cytoplasm/cell membrane/ribosomes/mitochondria

3. (i) both have a cell membrane/cytoplasm/ribosomes
   (ii) cellulose
   iii) plant cells have chloroplasts/mitochondria/vacuole/nucleus and bacteria cell does not.
   OR
   Bacterial cell has plasmids and plant cell does not.

4. (i) controls what enters and leaves the cell.

   (ii) ribosomes/cytoplasm

5. Cell membrane: controls what enters/leaves the cell
   Cytoplasm: where all chemical reactions occur
   Ribosomes: site of protein synthesis
   Mitochondria: site of aerobic respiration

6. Tick (✓) boxes to show those structures which are found in animal cells.

Chloroplasts	
Cytoplasm	✓
Large central vacuole	
Cell wall	
Nucleus	✓
Cell membrane	✓

Cells Ultra structure Answers

7. Cell membrane: controls what enters/leaves the cell
   Cytoplasm: where all chemical reactions occur
   Nucleus: controls all cell activity

8.

Leaf cell	*Cheek cell*
A, B C, D, E	A, D, E

9. a) cell wall b) no chloroplasts

10. cell membrane

11.

Part	*Name*	*Function*
B	chloroplast	Site of photosynthesis.
C	vacuole	contains cell sap
E	cell membrane	Controls what enters/leaves the cell.

12. selectively permeable

13 (i) X = vacuole Y = cytoplasm
   (ii) Controls all cell activity.

14. (i) cell membrane (ii) controls all cell activity

15
(i)

Letter	*Part*	*Function*
A	cell membrane	Controls what enters/leaves the cell.
B	nucleus	Controls all cell activity
C	cytoplasm	Where all chemical reactions occur

(ii) Q
Only Q has a cell wall/vacuole that plant cell have.

16.

Letter	*Cell part*
A	cell wall
B	chloroplast
C	vacuole

17. cell membrane

Cells Ultra structure Answers

18a (i)

Structure	*Function*
cell membrane	controls the entry and exit of materials
Cytoplasm	Where all chemical reactions occur
Nucleus	Controls all cell activity

(ii) chloroplasts

b) cellulose

19a)

Letter	*Name of structure*	*Function*
A	cell membrane	Controls what enters/leaves cell
B	cell wall	gives shape and support
C	nucleus	Controls all cell activity

b) vacuole/chloroplast/cell wall

20.

Part	*Cell structure*	*Function*
D	cell membrane	controls entry and exit of materials
E	vacuole	stores cell sap
B	nucleus	controls all cell activity

b) This diagram does not have any chloroplasts like root cells.

c) cellulose

21. (i) cytoplasm, cell membrane, nucleus

(ii) chloroplasts

22. B

23. a (i) E & C (ii) photosynthesis (iii) DNA

24.

Part of cell	*Name*	*Function*
X	nucleus	Controls all cell activity
Y	cell wall	Provides shape/support
Z	cell membrane	Controls what enters/leaves cell

25 a (i) plant, bacterial & fungal (ii) bacterial only

b) Mitochondria—site of aerobic respiration

OR

Ribosomes—site of protein synthesis

26 a) Y b) lots of mitochondria

c) leaves are green due to chloroplasts for photosynthesis

27 a) B b) E c) B & D d) F