

1 Which row matches the cell membrane and cell wall of a palisade cell to their functions?

	cell membrane	cell wall
<b>A</b>	active transport	active transport
<b>B</b>	active transport	support
<b>C</b>	support	active transport
<b>D</b>	support	support

2 In a plant, what is formed by a group of xylem vessels?

- A** a cell
- B** a tissue
- C** an organ
- D** an organ system

3 What are the functions of xylem vessels?

	absorption	conduction	photosynthesis	support
<b>A</b>	✓	✓	✓	x
<b>B</b>	✓	✓	x	x
<b>C</b>	x	✓	x	✓
<b>D</b>	x	x	✓	✓

4 A gene for insulin is taken from a human cell and placed in a bacterium.

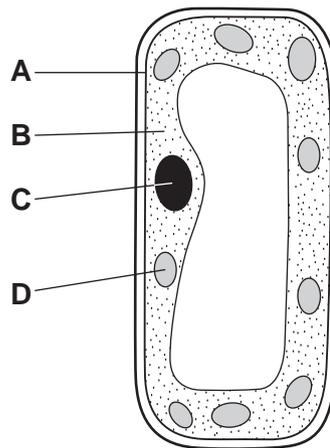
The bacterium can then make human insulin.

What is this process called?

- A** artificial selection
- B** genetic engineering
- C** heterozygous inheritance
- D** natural selection

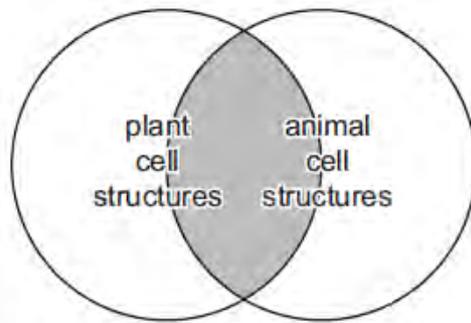
- 5 In a plant, what is formed by a group of xylem vessels?
- A a cell
  - B a tissue
  - C an organ
  - D an organ system

- 6 The diagram shows a palisade mesophyll cell.  
Which structure is **not** found in an animal cell?



- 7 Which statement is correct for phloem but **not** for xylem?
- A It carries mineral ions.
  - B It carries starch.
  - C It carries sucrose.
  - D It is no longer living.
- 8 What is the correct order of increasing size of the following structures, from smallest to largest?
- A chromosome → liver → white blood cell
  - B chromosome → white blood cell → liver
  - C liver → chromosome → white blood cell
  - D white blood cell → liver → chromosome

9 The shaded area of the diagram represents structures found in both plant and animal cells.



Which cell structure is from the shaded area?

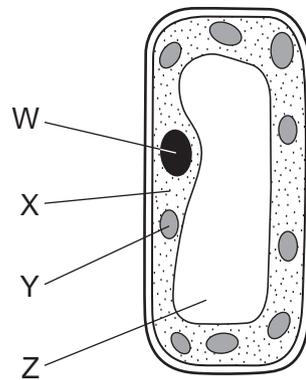
- A cell membrane
- B cell wall
- C chloroplast
- D large vacuole

10 A palisade cell and a nerve cell are observed under a light microscope.

Only the palisade cell has a

- A cell membrane.
- B cytoplasm.
- C nucleus.
- D vacuole.

11 The diagram shows a palisade mesophyll cell from a green leaf.



In which labelled part does photosynthesis occur and where is starch stored?

	photosynthesis occurs	starch is stored
<b>A</b>	X	W
<b>B</b>	X	Z
<b>C</b>	Y	X
<b>D</b>	Y	Y

12 Which row describes a root hair cell?

	allows water to pass into the plant	increases the surface area of the root	loses water by transpiration
<b>A</b>	✓	✓	✓
<b>B</b>	✓	✓	x
<b>C</b>	✓	x	✓
<b>D</b>	x	✓	✓

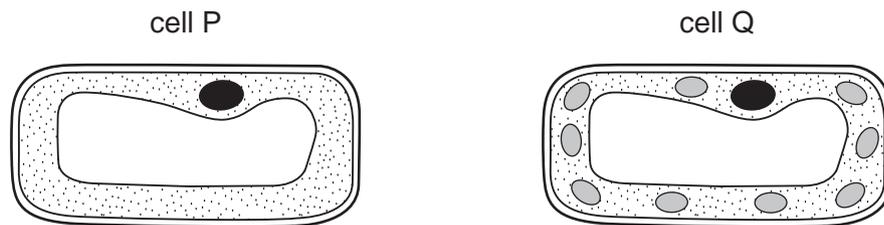
13 Three cell structures are listed.

- 1 cell wall
- 2 cytoplasm
- 3 nucleus

Which structures are found in palisade cells **and** in liver cells?

- A** 1 and 2      **B** 1 only      **C** 2 and 3      **D** 3 only

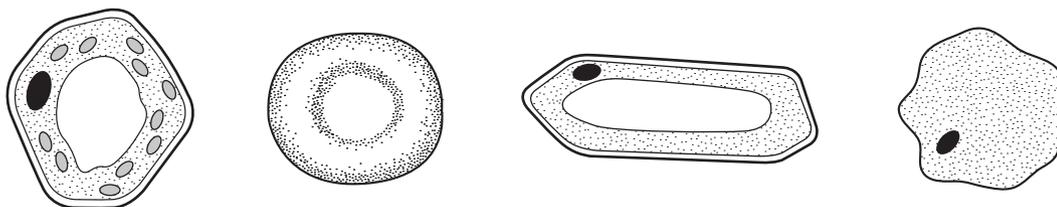
14 The diagram shows two plant cells, P and Q.



How does cell P differ from cell Q?

- A** It has no cell wall.
- B** It has no chloroplasts.
- C** It has no nucleus.
- D** It has no vacuole.

15 The diagram shows different types of cells.



Which structure do all these cells have?

- A** cell membrane
- B** cell wall
- C** chloroplast
- D** nucleus

16 The diagram shows a male gamete.



Which term describes the level of organisation of this gamete?

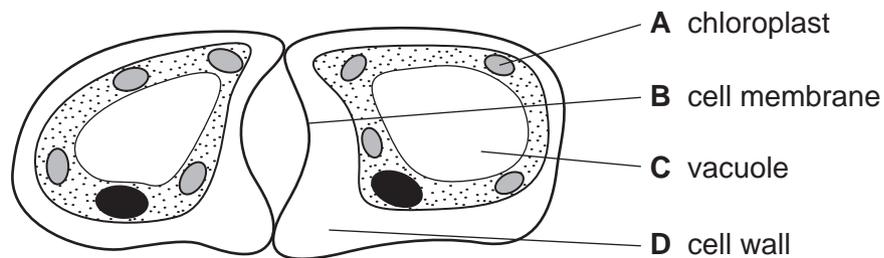
- A cell
- B organ
- C organism
- D tissue

17 Which description of xylem is correct?

- A a cell used for absorption
- B a tissue used for support
- C an organ system used for conduction
- D an organ used for transport

18 The diagram shows a student's drawing of two guard cells.

Which label line is **not** correct?



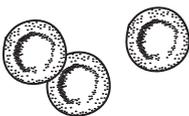
19 How does a liver cell differ from a palisade cell?

- A A liver cell has a membrane.
- B A liver cell has a vacuole.
- C A liver cell has no cell wall.
- D A liver cell has no cytoplasm.

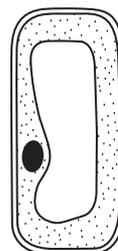
20 The diagram shows structures taken from two different organisms. P



Q



R



S



(cells not drawn to scale)

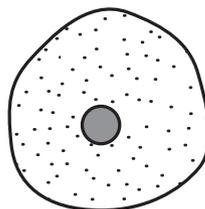
Which structures have the main function of transport?

- A P and R      B P and S      C Q and R      D Q and S

21 At which level of organisation is a root?

- A organ  
B organ system  
C organism  
D tissue

22 The diagram shows a liver cell.



Which features are present in this cell and also in most plant cells?

- A cell membrane and cytoplasm  
B cell membrane and sap vacuole  
C cell wall and cytoplasm  
D cell wall and sap vacuole

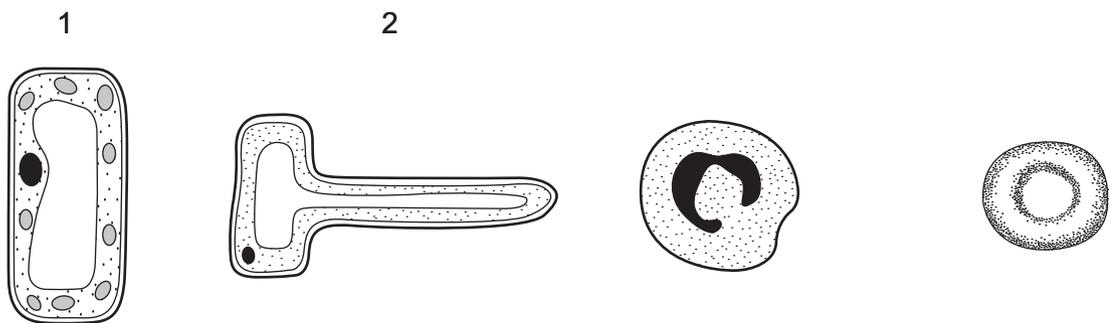
23 Which structure is present in a root hair cell but **not** in a liver cell?

- A cell wall
- B chloroplast
- C glycogen granule
- D nucleus

24 Which description of the heart is correct?

- A The heart is an organ, containing several systems, which forms part of the circulatory tissue.
- B The heart is an organ, containing several tissues, which forms part of the circulatory system.
- C The heart is a system, containing several organs, which forms part of the circulatory tissue.
- D The heart is a system, containing several tissues, which forms part of the circulatory organ.

25 The diagram shows four cells.

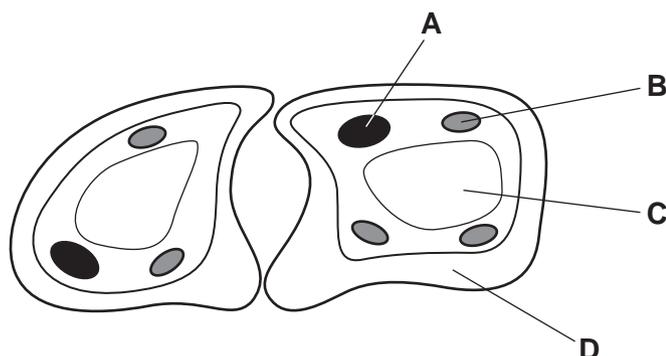


Which two cells contain cellulose and a vacuole?

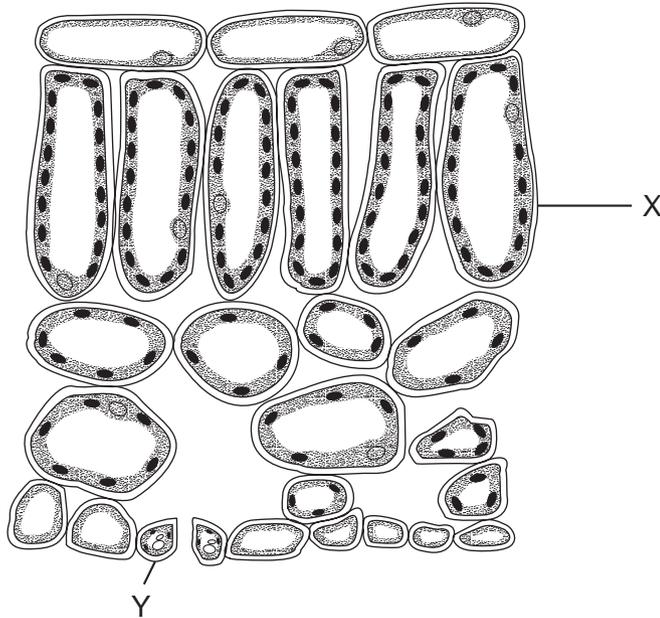
- A 1 and 2
- B 1 and 4
- C 2 and 3
- D 2 and 4

26 The diagram shows two guard cells from a leaf.

Which labelled part would also be found in liver cells?



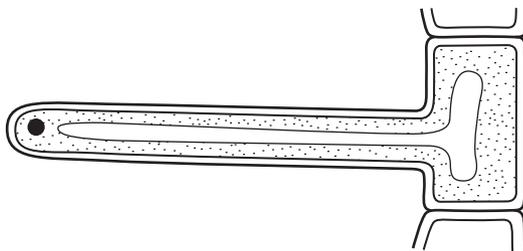
27 The diagram shows part of a leaf in cross-section.



Structures X and Y are both part of the same

- A cell.
- B organ.
- C tissue.
- D vessel.

28 The diagram shows a plant cell.



Which features show that it is a plant cell?

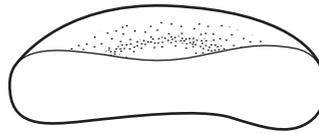
- A It has a cell wall and a vacuole.
- B It has a nucleus and cytoplasm.
- C It has a nucleus but no chloroplasts.
- D It has chloroplasts but no vacuole.

29 In a section through a plant, a student found a group of long, microscopic structures. The structures lacked end walls, cytoplasm and nuclei.

Which identification and reason best matches the student's observations?

	identification	reason
<b>A</b>	root hair cells	they do not contain a nucleus when mature
<b>B</b>	root hair cells	they do not contain cytoplasm to absorb water
<b>C</b>	xylem vessels	they can support the plant better without cytoplasm
<b>D</b>	xylem vessels	they need to be hollow to carry water efficiently

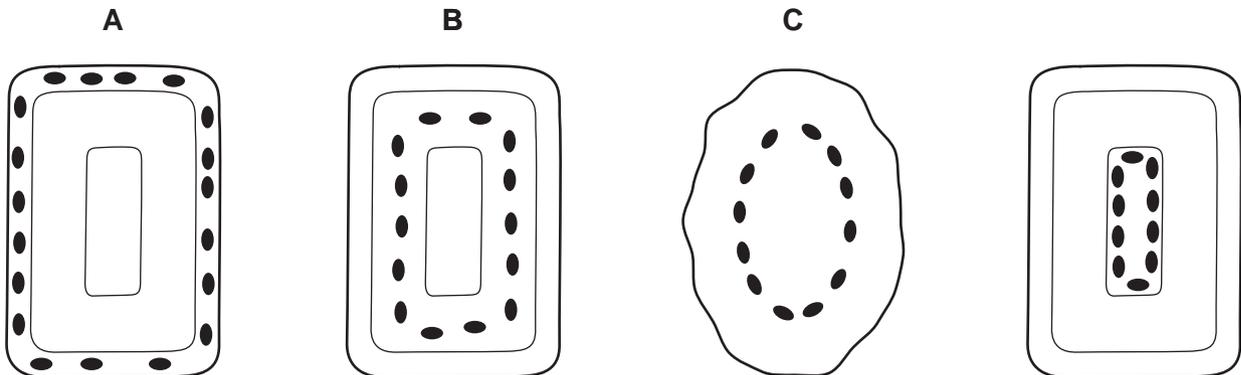
30 The diagram shows a specialised cell cut in half.



What does this diagram indicate about the structure of this cell?

- A** The cell has a cell wall.
- B** The cell is concave on each side.
- C** The cell is long and thin.
- D** The cell is red and carries oxygen.

31 Which diagram shows chloroplasts in their correct position in a plant cell?



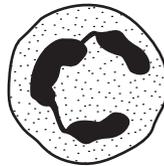
32 Which is **not** an organ?

- A blood
- B heart
- C tooth
- D vein

33 What results from the destruction of cilia in the trachea due to smoking?

- A Cilia cannot filter bacteria.
- B Cilia cannot trap dust.
- C Mucus cannot be manufactured.
- D Mucus cannot be carried towards the throat.

34 The cell shown in the diagram has been magnified 3000 times. The diagram is 21 mm wide.



What is the actual diameter of the cell?

- A 21 mm
- B  $\frac{21}{3000}$  mm
- C 21 x 3000 mm
- D  $\frac{3000}{21}$  mm

35 Xylem is an example of

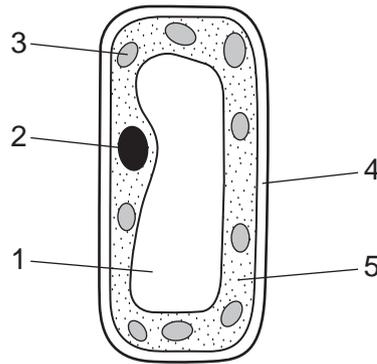
- A a cell.
- B a tissue.
- C an organ.
- D an organ system.

36 Plant cells are often green but animal cells are not usually green.

Which structure in plant cells makes them green?

- A cell wall
- B chloroplast
- C cytoplasm
- D vacuole

37 The diagram shows the structure of a palisade cell.



Which features are also found in a liver cell?

- A 1 and 2
- B 2 and 5
- C 3 and 4
- D 4 and 5

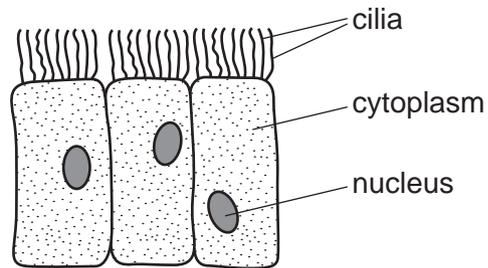
38 What are the levels of organisation of the retina and of the eye?

	retina	eye
A	cell	organ
B	cell	organ system
C	tissue	organ
D	tissue	organ system

39 Which cell helps to move dust particles out of an organism?

- A ciliated cell
- B guard cell
- C muscle cell
- D red blood cell

40 The diagram shows some cells.



Where are these cells found?

- A alimentary canal
- B blood
- C bronchial wall
- D plant roots

41 Which features are possessed by **all** plant cells?

	a cell wall	chloroplasts
A	✓	✓
B	✓	x
C	x	✓
D	x	x

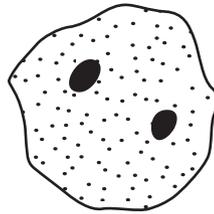
42 For which process is a root hair cell adapted?

- A absorption of mineral ions
- B support of stem
- C translocation of sucrose
- D transport of oxygen

43 What can be found in both root hair cells and xylem vessels?

	cell membrane	cell wall	cytoplasm	nucleus
<b>A</b>	✓	✓	✓	✓
<b>B</b>	✓	x	✓	✓
<b>C</b>	x	✓	x	x
<b>D</b>	x	x	✓	x

44 The diagram shows a liver cell.



In which way does this cell differ from a typical animal cell?

- A** It has a cell membrane.
- B** It has no vacuole.
- C** It has no cell wall.
- D** It has two nuclei.

45 Which row shows the main tissue and organ involved in the process?

	process	tissue	organ
<b>A</b>	excretion in humans	nerve	brain
<b>B</b>	nutrition in humans	platelets	veins
<b>C</b>	photosynthesis in plants	mesophyll	leaf
<b>D</b>	translocation in plants	epidermis	stem

46 Which structure is **not** an organ?

- A** artery
- B** flower
- C** spinal cord
- D** xylem

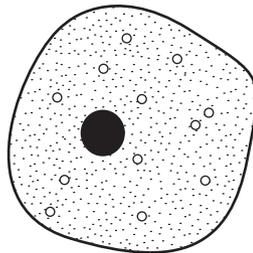
47 Which features do animal cells share with plant cells?

	chloroplast	cytoplasm	nucleus
A	✓	✓	✓
B	✓	x	✓
C	x	✓	✓
D	x	x	x

48 Which pair of statements about a plant cell is correct?

	outer surface of the cell	position of sap vacuole
A	cell membrane	outside the cytoplasm
B	cell membrane	surrounded by the cytoplasm
C	cell wall	outside the cytoplasm
D	cell wall	surrounded by the cytoplasm

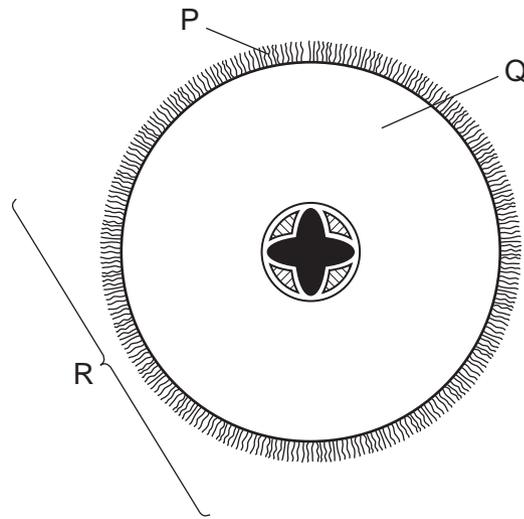
49 The diagram shows a cell.



Which structure is **not** present?

- A cell membrane
- B cell wall
- C cytoplasm
- D nucleus

50 The diagram shows a section through a root.



What are the levels of organisation of the labelled structures?

	cell	or	tissue
<b>A</b>	P		R
<b>B</b>	P		Q
<b>C</b>	Q		P
<b>D</b>	R		P