

1. June/2023/Paper\_0610/11/No.1

What are characteristics of all organisms?

- A egestion and excretion
- B egestion and nutrition
- C excretion and nutrition
- D excretion and photosynthesis

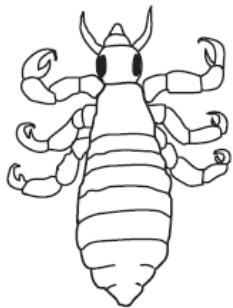
2. June/2023/Paper\_0610/11/No.2

The scientific name for the golden eagle is *Aquila chrysaetos*.

What is the genus of the golden eagle?

- A *Aquila*
- B *chrysaetos*
- C eagle
- D golden

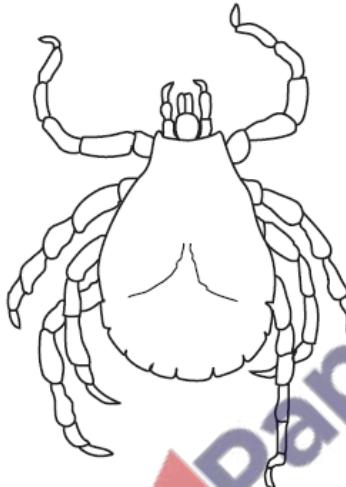
The diagram shows four arthropods.



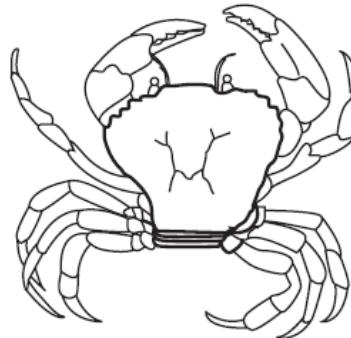
*Pediculus*  $\times 20$



*Anopheles*  $\times 10$



*Dermacentor*  $\times 7$



*Carcinus*  $\times 0.5$

How many of these arthropods are insects?

A 1

B 2

C 3

D 4

Living animals release carbon dioxide.

This is an example of which life process?

- A excretion
- B movement
- C nutrition
- D sensitivity

Some statements about species are given.

- 1 Members of a species all look identical.
- 2 Members of a species belong to the same genus.
- 3 Members of a species can produce fertile offspring.
- 4 Species are named using an international system.

Which statements are correct?

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

The table shows some features of different animals.

Which animal is a reptile?

	wings	hair	scales
A	x	x	✓
B	x	x	x
C	✓	x	✓
D	x	✓	x

Which structures are found in the cells of all living organisms?

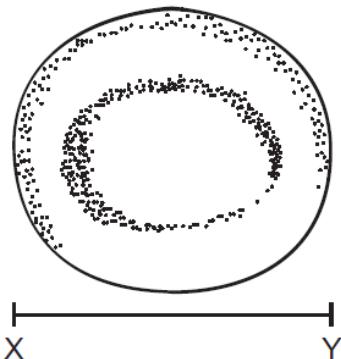


1 cell membrane  
2 chloroplast  
3 cytoplasm

A 1, 2 and 3      B 1 and 2 only      C 1 and 3 only      D 2 and 3 only

8. June/2023/Paper\_0610/12/No.5

A diagram of a human red blood cell is shown. The length of line XY on the diagram is 40 mm. The actual width of the cell is 0.008 mm.



What is the magnification of the diagram?

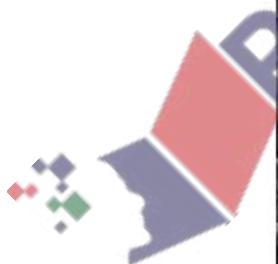
A  $\times 500$       B  $\times 5000$       C  $\times 50\,000$       D  $\times 500\,000$

9. June/2023/Paper\_0610/13/No.1

What are excretion, sensitivity and reproduction characteristics of?

A all animals and all plants  
B animals only  
C plants only  
D some animals and some plants

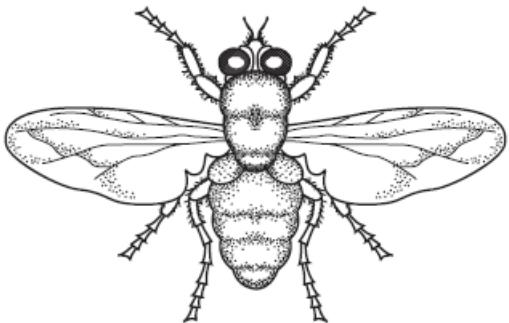
The photograph shows an organism.



Which visible feature can be used to classify this organism as a bird?

- A feathers
- B lays eggs
- C two legs
- D wings

The diagram shows an arthropod.



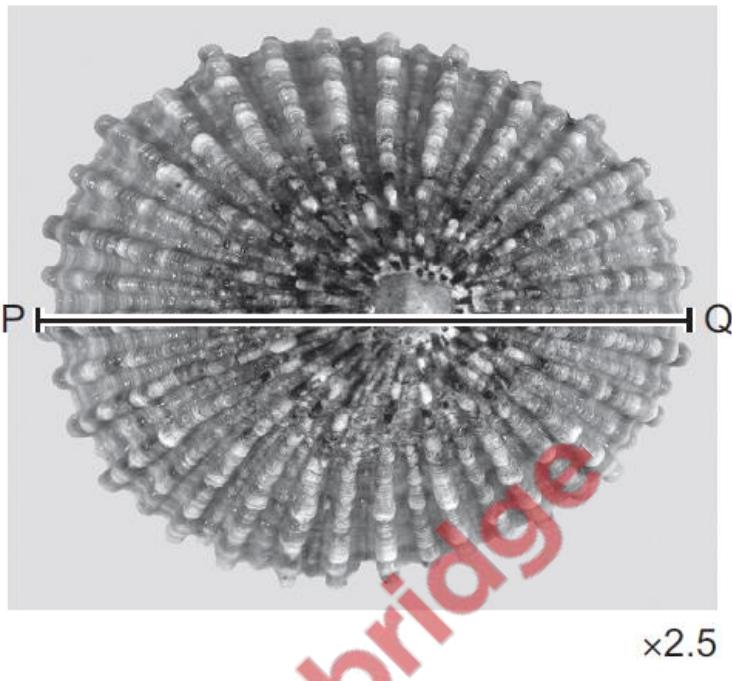
Which features are characteristic of **all** arthropods?

- A jointed legs and segmented body
- B jointed legs and thorax
- C segmented body and wings
- D thorax and wings

Which statement **about** cell structure is correct?

- A An animal cell has a cell wall.
- B A bacterium has a cell wall.
- C An animal cell has chloroplasts.
- D A bacterium has chloroplasts.

The photograph shows a limpet. The length of line PQ on the image is 65 mm.



What is the actual diameter of the limpet along line PQ?

- A 2.6 mm
- B 19.5 mm
- C 26 mm
- D 195 mm

What are characteristics of all organisms?

- A egestion and excretion
- B egestion and nutrition
- C excretion and nutrition
- D excretion and photosynthesis

15. June/2023/Paper\_0610/21/No.2

The scientific name for the golden eagle is *Aquila chrysaetos*.

What is the genus of the golden eagle?

- A *Aquila*
- B *chrysaetos*
- C eagle
- D golden

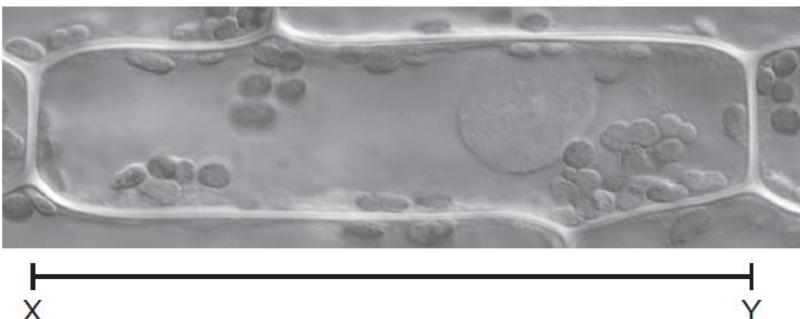
16. June/2023/Paper\_0610/21/No.3

Which row shows structures that are present in both root hair cells and palisade mesophyll cells?

	cell wall	chloroplasts	cytoplasm	vacuole	key
A	✓	✓	✓	✗	✓ = present
B	✗	✓	✓	✓	✗ = absent
C	✓	✗	✓	✓	
D	✓	✓	✗	✓	

17. June/2023/Paper\_0610/21/No.4

The photomicrograph shows a plant cell. The length of line XY is 90 mm. The actual length of the cell is 30  $\mu\text{m}$ .



What is the magnification of the photomicrograph?

- A  $\times 300$
- B  $\times 3000$
- C  $\times 33\,000$
- D  $\times 330\,000$

18. June/2023/Paper\_0610/22/No.1

Which process occurs both in plants and in animals?

- A excretion
- B phagocytosis
- C photosynthesis
- D transpiration

19. June/2023/Paper\_0610/22/No.2

Some statements about species are given.

- 1 Members of a species all look identical.
- 2 Members of a species belong to the same genus.
- 3 Members of a species can produce fertile offspring.
- 4 Species are named using an international system.

Which statements are correct?

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

20. June/2023/Paper\_0610/22/No.3

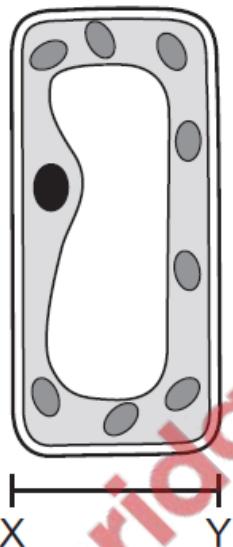
Which structures are found in the cells of all living organisms?

- 1 cell membrane
- 2 chloroplast
- 3 cytoplasm

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

In the diagram of the palisade cell, the distance between X and Y is 20 mm.

The actual width of the cell between X and Y is  $40 \mu\text{m}$ .



What is the magnification of the diagram?

A  $\times 200$

B  $\times 500$

C  $\times 2500$

D  $\times 5000$

What are two characteristics of all living organisms?

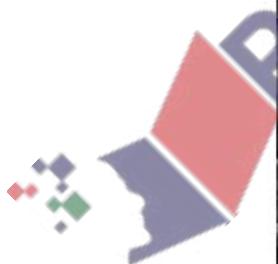
A breathing and reproduction

B photosynthesis and excretion

C reproduction and respiration

D respiration and photosynthesis

The photograph shows an organism.



Which visible feature can be used to classify this organism as a bird?

- A** feathers
- B** lays eggs
- C** two legs
- D** wings

Which statement about cell structure is correct?

- A An animal cell has a cell wall.
- B A bacterium has a cell wall.
- C An animal cell has chloroplasts.
- D A bacterium has chloroplasts.

The diameter of an egg cell from a frog is 2.5 mm.

The diameter of an egg cell from a human is 120  $\mu\text{m}$ .

Which value shows approximately how many times larger an egg cell from a frog is than an egg cell from a human?

- A  $\times 2$
-  B  $\times 21$
- C  $\times 48$
- D  $\times 300$

(a) Describe the meaning of the term species.

.....  
.....  
..... [2]

(b) Fig. 1.1 is a photograph of *Lithobius forficatus*, a species of myriapod.



Fig. 1.1

(i) State the genus of the organism shown in Fig. 1.1.

..... [1]

(ii) State **one** feature **visible** in Fig. 1.1 that identifies the organism as:

a myriapod .....  
an arthropod. .... [2]

(iii) State the names of **two** groups of arthropods, other than myriapods.

1 .....

2 .....

[2]

(iv) State **two** features of plant cells that would be **absent** in the cells of the organism shown in Fig. 1.1.

1 .....

2 .....

[2]

(c) Adaptive features enable organisms to survive in their environment.

Fig. 1.2 is a photograph of another species of arthropod. Some of its adaptive features are visible in Fig. 1.2.



Fig. 1.2

(i) State **one** adaptive feature visible in Fig. 1.2 that reduces water loss when the organism is on land.

..... [1]

(ii) State the name of the kingdom that the organism in Fig. 1.2 belongs to.

..... [1]

[Total: 11]

Fig. 1.1 shows a photograph of a pseudoscorpion.

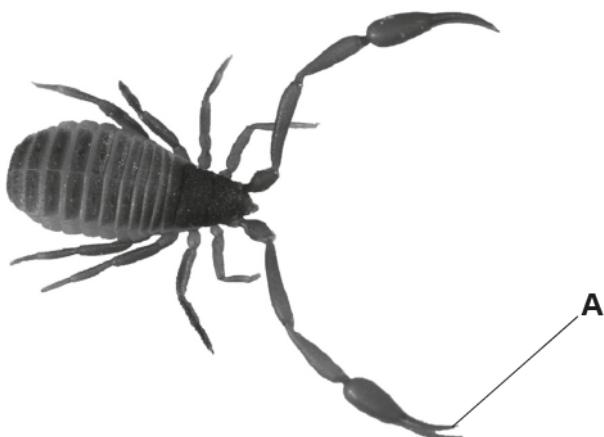


Fig. 1.1

(a) (i) State **two** features, **visible** in Fig. 1.1, that can be used to classify this organism as an arachnid.

1 .....

2 .....

[2]

(ii) State the kingdom that arachnids belong to.

..... [1]

(b) (i) Complete the definition of the term adaptive feature by inserting the missing words.

An adaptive feature is an ..... feature that helps an organism to

..... and ..... in its environment.

[3]

(ii) The part labelled **A** in Fig. 1.1 is an adaptive feature of the pseudoscorpion.

Suggest a function of the part labelled **A** in Fig. 1.1.

.....

.....

..... [1]

[Total: 7]

(a) Fig. 2.1 is a diagram showing some of the structures found in a plant cell.

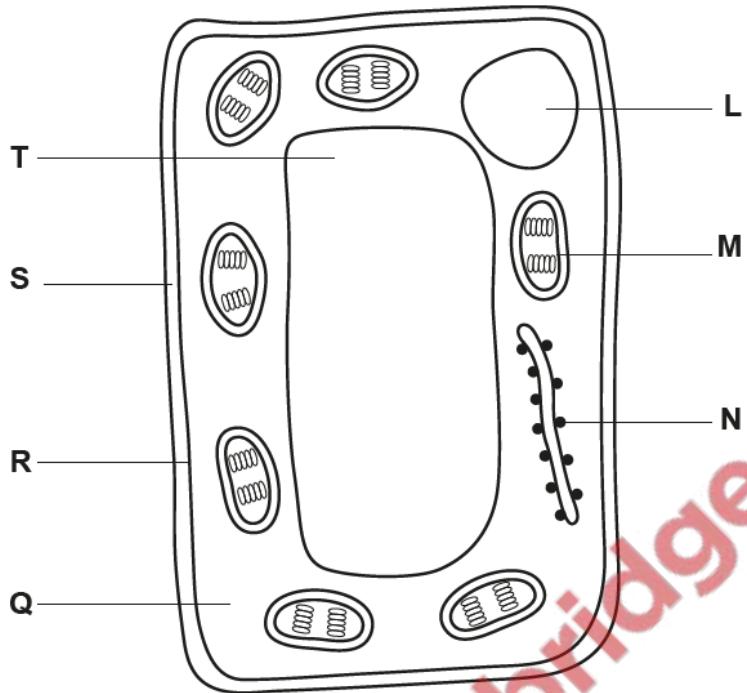


Fig. 2.1

Table 2.1 shows the names of some plant cell structures, their functions and the letters that identify them in Fig. 2.1.

Complete Table 2.1 by writing the missing name, letters and functions in the spaces provided.

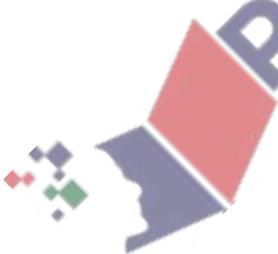
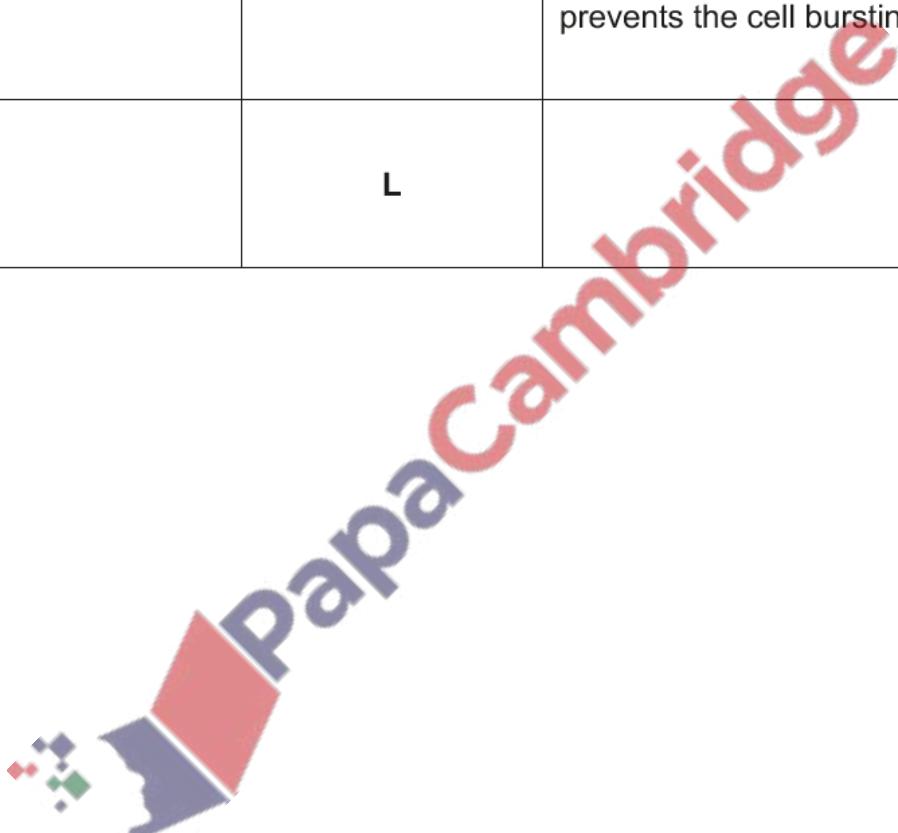


Table 2.1

name of structure	letter from Fig. 2.1	one function
chloroplast		site of photosynthesis
ribosome	N	
cell wall		prevents the cell bursting
	L	

[5]



(a) Fig. 1.1 is a photograph of an insect. Insects are arthropods.



Fig. 1.1

(i) Arthropods belong to the animal kingdom.

State the name of **one other** kingdom.

..... [1]

(ii) State **one** feature **visible** in Fig. 1.1 that is present in insects but **not** in the other groups of arthropods.

..... [1]

(iii) Complete Table 1.1 by writing:

- the names of **two** groups of arthropods **other than** insects
-  **one identifying** feature for each named group.

Table 1.1

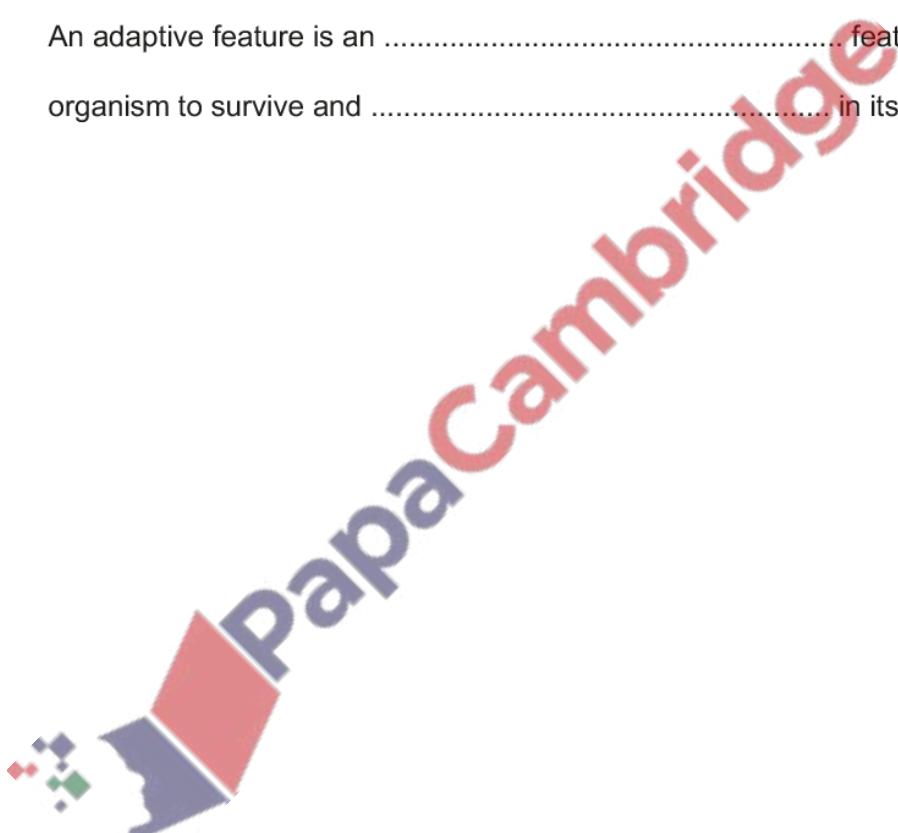
arthropod group	name of the arthropod group	identifying feature
1		
2		

[4]

(b) (i) Complete the description of an adaptive feature.

An adaptive feature is an ..... feature that helps an organism to survive and ..... in its environment.

[2]



(ii) Fig. 1.2 is a photograph of a leaf insect.

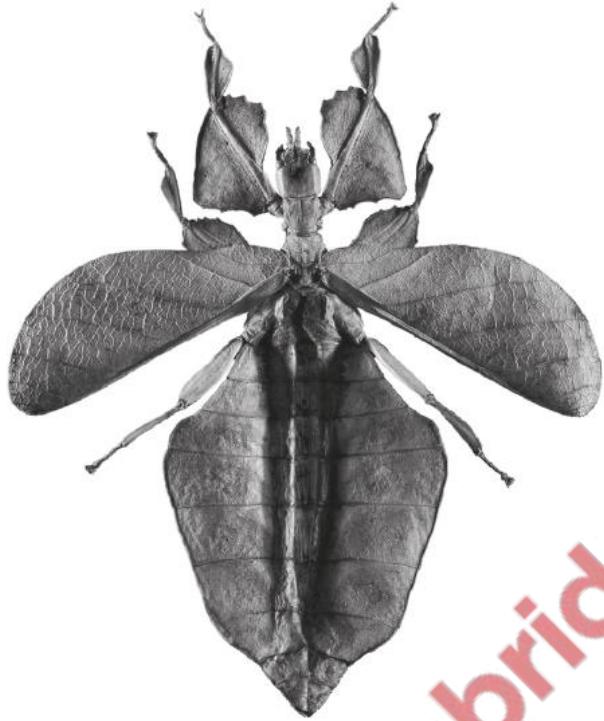


Fig. 1.2

State **one** adaptive feature **visible** in Fig. 1.2 and suggest how the adaptive feature helps the animal to survive.

feature .....

.....

suggestion .....

.....

[2]

[Total: 10]

(a) Fig. 2.1 is a labelled diagram of an animal cell.

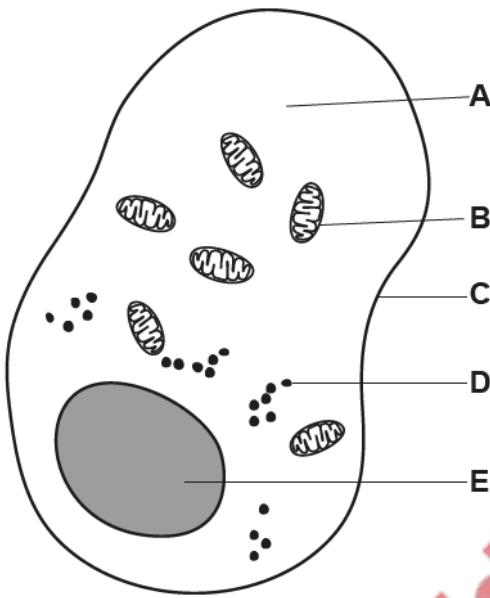


Fig. 2.1

(i) The boxes on the left show the functions of some of the structures shown in Fig. 2.1.

The boxes on the right show the letters of the structures labelled in Fig. 2.1.

Draw lines to link each function to the correct letter.

Draw **four** lines.

functions	letter in Fig. 2.1
contains and supports other cell structures	A
controls the activities of the cell	B
controls which substances enter or leave the cell	C
protein synthesis	D
	E

[4]

(ii) State **two** letters shown in Fig. 2.1 that identify structures which are also found in bacterial cells.

..... and .....

[2]

(b) Respiration is a characteristic of living organisms.

State **three other** characteristics of all living organisms.

1 .....

2 .....

3 .....

[3]

[Total: 9]

31. June/2023/Paper\_0610/42/No.3b

(b) (i) Bacteria are prokaryotes.

State **two** features of **all** prokaryotes.

1 .....

2 .....

[2]

(ii) Some bacteria have a flagellum.

State the function of a flagellum.

..... [1]

**32. March/2023/Paper\_ 0610/12/No.2**

Which two parts are included in the scientific name of an organism?

- A** genus and group
- B** genus and species
- C** group and kingdom
- D** kingdom and species

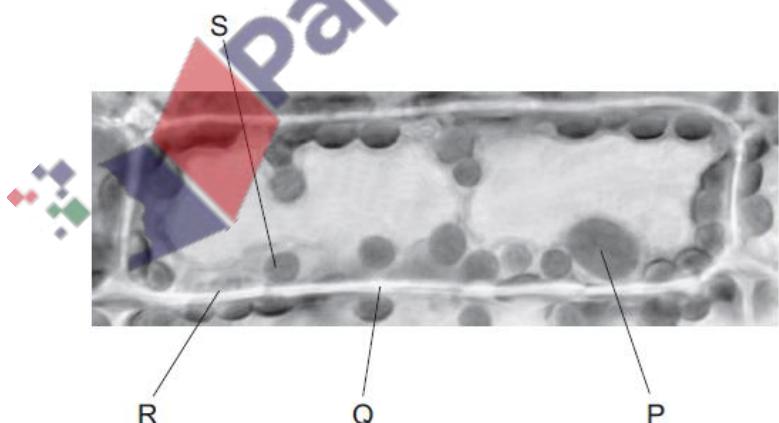
**33. March/2023/Paper\_ 0610/12/No.3**

How many jointed legs does an insect have?

- A** two pairs
- B** three pairs
- C** four pairs
- D** more than six pairs

**34. March/2023/Paper\_ 0610/12/No.4**

The photomicrograph shows a cell from a type of aquatic plant.



Which labelled parts indicate that this is a plant cell?

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

**35. March/2023/Paper\_ 0610/42/No.3**

(a) Fig. 3.1 shows part of a classification diagram for plants.

(i) Complete Fig. 3.1.

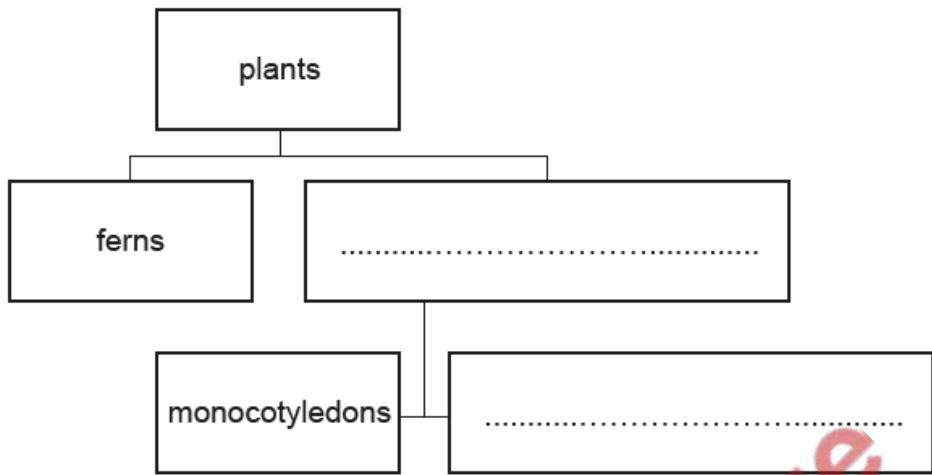


Fig. 3.1

[2]

(ii) Describe **two** identifying features of monocotyledons.

1 ..... [2]

2 ..... [2]



(b) Fig. 3.2 shows the life cycle of a fern. The life cycle of a fern has some similarities and some differences compared with the life cycles of other plants.

The letters represent processes that occur during the life cycle.

The haploid stages of the life cycle are represented by (n).

The diploid stages of the life cycle are represented by (2n).

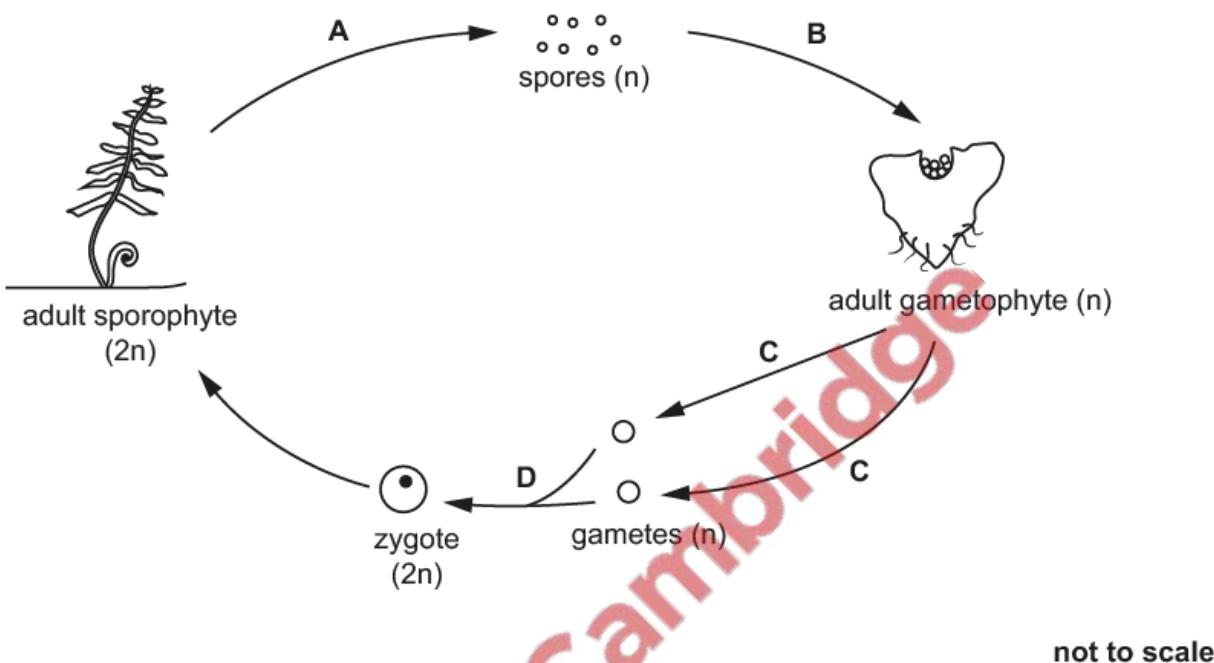


Fig. 3.2

(i) The adult sporophyte has 1200 chromosomes in its body cells.

State the number of chromosomes in the body cells of the gametophyte.

..... [1]

(ii) Identify and describe process A in Fig. 3.2.

.....

.....

.....

..... [3]

(iii) State the name of process D in Fig. 3.2.

..... [1]

(c) Fig. 3.3 shows the parts of two flowers from two different plants of the same species.

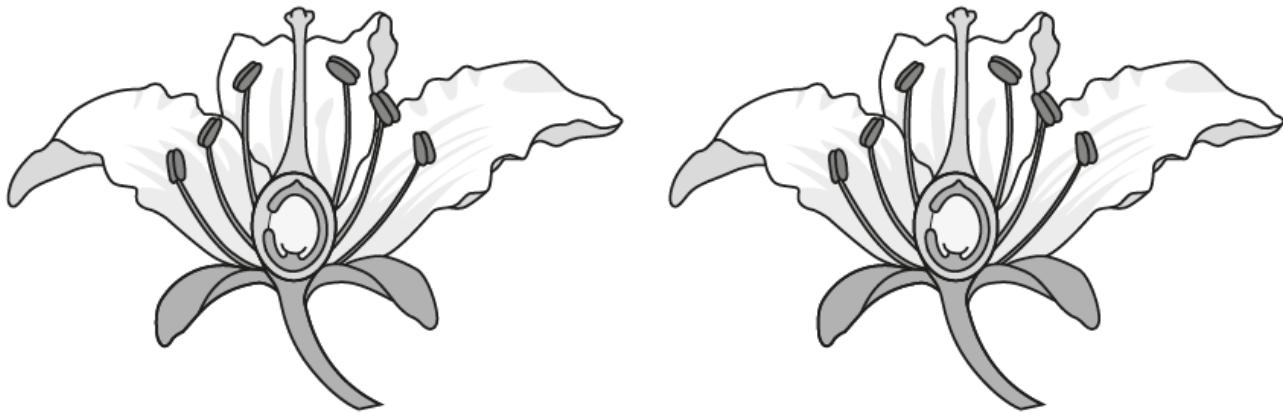


Fig. 3.3

(i) Describe what is meant by the term species.

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

[2]

(ii) Annotate Fig. 3.3 to show the mechanism of cross-pollination by:

- labelling the structures involved
- drawing an arrow to show the pathway of pollen.

[3]

(iii) Draw an X on Fig. 3.3 to show where fertilisation occurs.

[1]

(iv) Explain the disadvantages of cross-pollination compared with self-pollination.

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

[3]

[Total: 18]