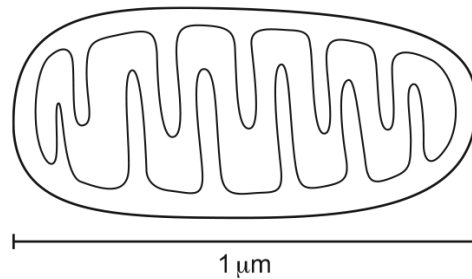


### 2.3. SIZE OF SPECIMENS

## 2.3 Size of specimens

01. 0610\_m22\_qp\_22 Q: 3

The diagram shows a mitochondrion. The scale bar shows the actual size of the mitochondrion.



The diagram is 70 mm long.

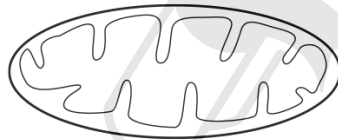
What is the magnification of the diagram?

- A**  $\times 0.0007$       **B**  $\times 70$       **C**  $\times 7000$       **D**  $\times 70\,000$
- 

02. 0610\_m21\_qp\_22 Q: 6

A student draws a diagram of a mitochondrion.

The diagram has a magnification of  $\times 20\,000$ .



The diagram is 5 cm long.

What is the actual size of the mitochondrion?

- A**  $0.00025\ \mu\text{m}$       **B**  $0.0025\ \mu\text{m}$       **C**  $0.025\ \mu\text{m}$       **D**  $2.5\ \mu\text{m}$
- 

03. 0610\_s21\_qp\_21 Q: 6

A photograph shows a plant cell nucleus measuring 2 mm across.

If the magnification of the cell is  $\times 500$ , what is the actual size of the nucleus?

- A**  $0.00002\ \text{mm}$       **B**  $0.004\ \text{mm}$       **C**  $0.04\ \text{mm}$       **D**  $250\ \text{mm}$
- 

04. 0610\_s21\_qp\_22 Q: 6

A photograph shows a plant cell nucleus measuring 2 mm across.

If the magnification of the cell is  $\times 500$ , what is the actual size of the nucleus?

- A**  $0.00002\ \text{mm}$       **B**  $0.004\ \text{mm}$       **C**  $0.04\ \text{mm}$       **D**  $250\ \text{mm}$
-

05. 0610\_w21\_qp\_21 Q: 4

The length of a mitochondrion in a photomicrograph is 15 mm.

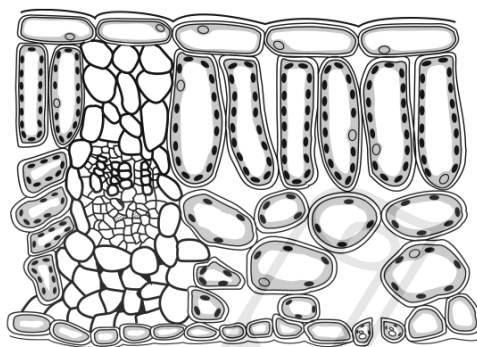
The actual length of the mitochondrion is 3  $\mu\text{m}$ .

What is the magnification of the photomicrograph?

- A**  $\times 5$                       **B**  $\times 45$                       **C**  $\times 5000$                       **D**  $\times 45\,000$

06. 0610\_m20\_qp\_22 Q: 5

The actual thickness of the leaf shown in the diagram is 2000  $\mu\text{m}$ , but its thickness in the diagram is 50 mm.



What is the magnification of the diagram?

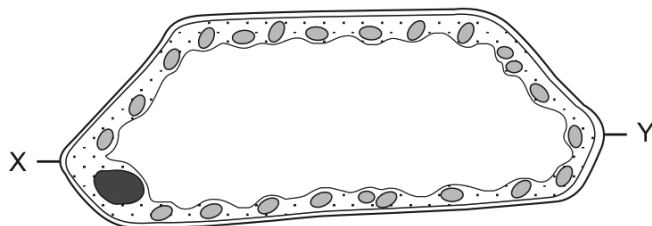
- A**  $\times 0.025$                       **B**  $\times 25$                       **C**  $\times 100$                       **D**  $\times 100\,000$

07. 0610\_p20\_qp\_20 Q: 3

The diagram shows a high-power drawing of a plant cell.

The distance between X and Y on the diagram below is 80 mm.

The actual length of the cell between X and Y was 160  $\mu\text{m}$ .



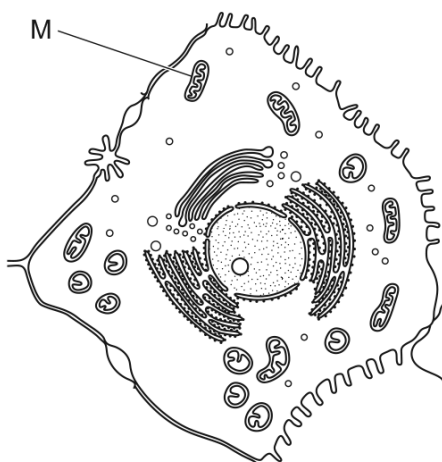
What is the magnification of the cell?

- A**  $\times 50$                       **B**  $\times 100$                       **C**  $\times 500$                       **D**  $\times 1000$

2.3. SIZE OF SPECIMENS

08. 0610\_s20\_qp\_22 Q: 4

The diagram shows a human liver cell.



The length of structure M on the diagram is 6 mm.

The magnification of the diagram is  $\times 2000$ .

What is the actual length of M?

- A**  $0.03\ \mu\text{m}$       **B**  $3\ \mu\text{m}$       **C**  $333\ \mu\text{m}$       **D**  $12000\ \text{mm}$
- 

09. 0610\_s20\_qp\_23 Q: 4

The diagram shows an onion plant epidermal cell.

The distance between X and Y on the diagram is 60 mm.

The actual length of the cell between X and Y was  $150\ \mu\text{m}$ .

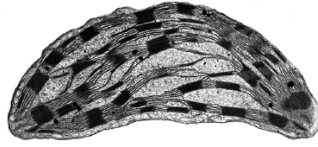


What is the magnification of the cell?

- A**  $\times 40$       **B**  $\times 250$       **C**  $\times 400$       **D**  $\times 2500$
-

10. 0610\_w20\_qp\_21 Q: 4

The diagram shows an image of a chloroplast. The image is 5 cm long.



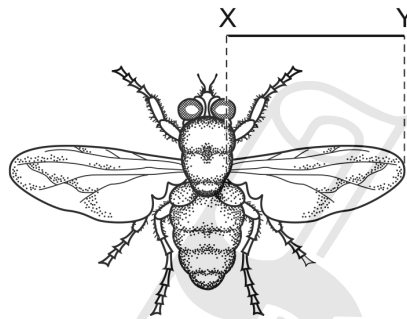
The actual length of the chloroplast is 5  $\mu\text{m}$ .

What is the magnification of the image?

- A**  $\times 10$       **B**  $\times 1000$       **C**  $\times 10000$       **D**  $\times 100000$
- 

11. 0610\_m19\_qp\_22 Q: 6

The diagram shows a fly.



The line XY represents the length of the wing.

The length of line XY is 26 mm.

The actual size of the wing between XY is 4 mm.

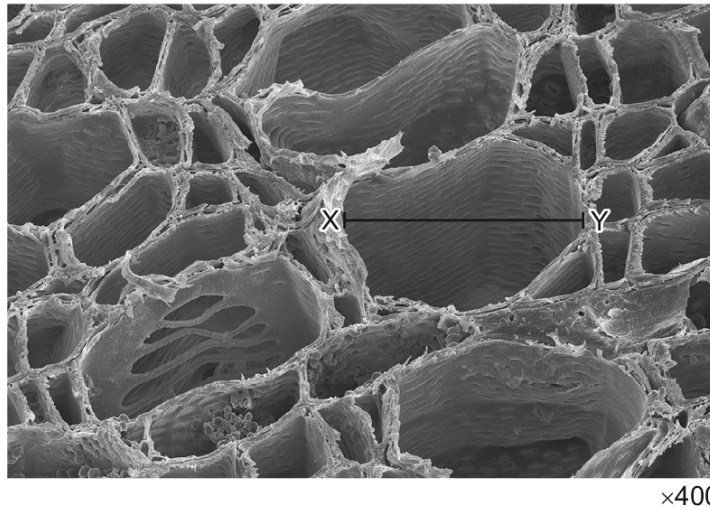
What is the magnification of the image?

- A**  $\times 0.15$       **B**  $\times 6.5$       **C**  $\times 22$       **D**  $\times 104$
-

2.3. SIZE OF SPECIMENS

12. 0610\_s19\_qp\_22 Q: 5

The diagram shows a xylem vessel in a plant stem. The magnification is  $\times 400$ .



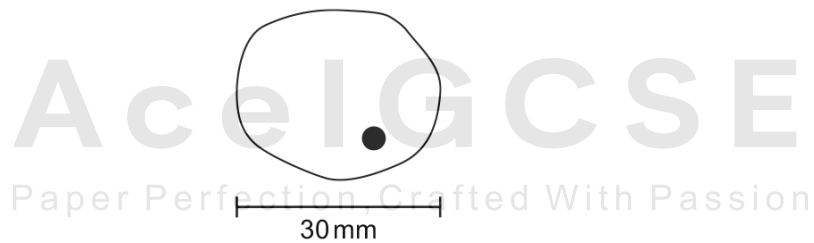
What is the actual width of the xylem vessel along the line XY?

- A**  $8.75\ \mu\text{m}$       **B**  $14\ \mu\text{m}$       **C**  $87.5\ \mu\text{m}$       **D**  $140\ \mu\text{m}$

---

13. 0610\_w19\_qp\_21 Q: 5

The diagram shows a cell with an actual size of  $30\ \mu\text{m}$ .

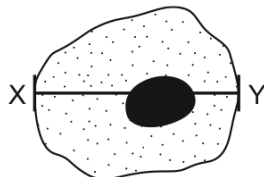


What is the magnification of the diagram?

- A**  $\times 10$       **B**  $\times 100$       **C**  $\times 1000$       **D**  $\times 10000$
-

14. 0610\_w19\_qp\_22 Q: 5

The diagram shows a drawing of a human cheek cell.



The distance between points X and Y on the diagram is 30 mm.

The actual length of the cell between X and Y was  $60\ \mu\text{m}$ .

What is the magnification of the cell?

- A**  $\times 50$       **B**  $\times 200$       **C**  $\times 500$       **D**  $\times 2000$
- 

15. 0610\_w19\_qp\_23 Q: 5

A bacterium is  $0.5\ \mu\text{m}$  long.

A student makes a drawing of the bacterium. The student's drawing is 100 mm long.

What is the magnification of the student's drawing?

- A**  $\times 0.005$       **B**  $\times 50$       **C**  $\times 200$       **D**  $\times 200\ 000$
- 

16. 0610\_m18\_qp\_22 Q: 5

A student was told that a drawing of a bacterial cell had been magnified 30 000 times. The length of the drawing was 45 mm.

What was the actual length of the bacterium?

- A** 0.15 mm      **B**  $1.5\ \mu\text{m}$       **C** 0.66 mm      **D**  $0.66\ \mu\text{m}$
- 

17. 0610\_m17\_qp\_22 Q: 5

The length of a specimen in a photograph is 45 mm. Its actual length is 25 mm.

What is the magnification of the photograph?

- A**  $\times 0.6$       **B**  $\times 1.6$       **C**  $\times 1.8$       **D**  $\times 1125$
-

2.3. SIZE OF SPECIMENS

18. 0610\_w17\_qp\_21 Q: 3

The length of a mitochondrion in a photomicrograph is 15 mm.

The actual length of the mitochondrion is 3  $\mu\text{m}$ .

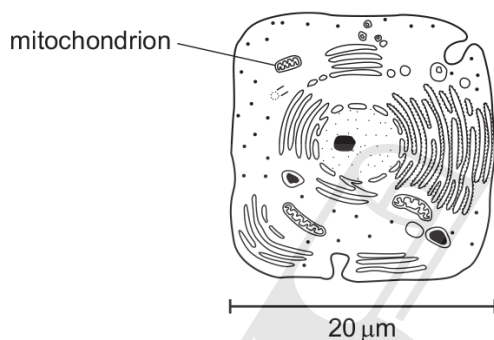
What is the magnification of the photomicrograph?

- A**  $\times 5$                       **B**  $\times 45$                       **C**  $\times 5000$                       **D**  $\times 45\,000$
- 

19. 0610\_w17\_qp\_22 Q: 4

The diagram shows a magnified image of a human liver cell with a mitochondrion labelled. The actual size of the liver cell is 20  $\mu\text{m}$ .

The image size of the liver cell is 40 mm and the image size of the mitochondrion is 4 mm.

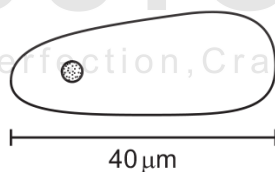


What is the actual size of the mitochondrion shown in the diagram?

- A** 0.002 mm                      **B** 0.02 mm                      **C** 0.2 mm                      **D** 2 mm
- 

20. 0610\_w17\_qp\_23 Q: 4

The diagram shows a pollen grain of a rice plant. The size of the image is 40 mm

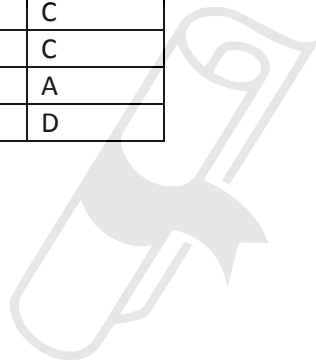


The actual length of the pollen grain is 40  $\mu\text{m}$ .

By how many times has the diagram been magnified?

- A**  $\times 1$                       **B**  $\times 10$                       **C**  $\times 100$                       **D**  $\times 1000$
-

SN	Paper	Q. No.	Answer
01	0610_m22_qp_22	3	D
02	0610_m21_qp_22	6	D
03	0610_s21_qp_21	6	B
04	0610_s21_qp_22	6	B
05	0610_w21_qp_21	4	C
06	0610_m20_qp_22	5	B
07	0610_p20_qp_20	3	C
08	0610_s20_qp_22	4	B
09	0610_s20_qp_23	4	C
10	0610_w20_qp_21	4	C
11	0610_m19_qp_22	6	B
12	0610_s19_qp_22	5	C
13	0610_w19_qp_21	5	C
14	0610_w19_qp_22	5	C
15	0610_w19_qp_23	5	D
16	0610_m18_qp_22	5	B
17	0610_m17_qp_22	5	C
18	0610_w17_qp_21	3	C
19	0610_w17_qp_22	4	A
20	0610_w17_qp_23	4	D



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