

Smart Edu Hub / Smart Exam Resources

9700 / CAIE A level Biology / Paper-1/ Multiple Choice
Questions

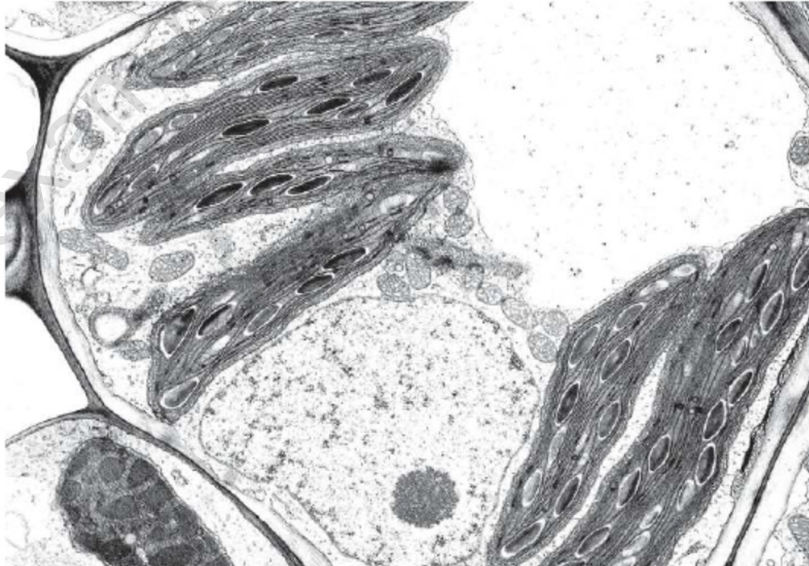
1.1.1-Calculate-Magnification-and-Actual- Size-Set-2-qp

Total Questions: 10

Questions

Question 1:

- 3 The magnification of this electron micrograph is 5×10^3 .



What is the actual size of the nucleolus?

- A $0.2 \mu\text{m}$ B $0.5 \mu\text{m}$ C $2 \mu\text{m}$ D $20 \mu\text{m}$

Question 2:

A specimen is viewed under a microscope using green light with a wavelength of 510 nm.

If the same specimen is viewed under the same conditions, but using red light with a wavelength of 650 nm instead, what effect will this have on the magnification and on the resolution of the microscope?

	magnification	resolution
A	decreased	remains the same
B	increased	increased
C	remains the same	decreased
D	remains the same	increased

Questions (Continued)

Question 3:

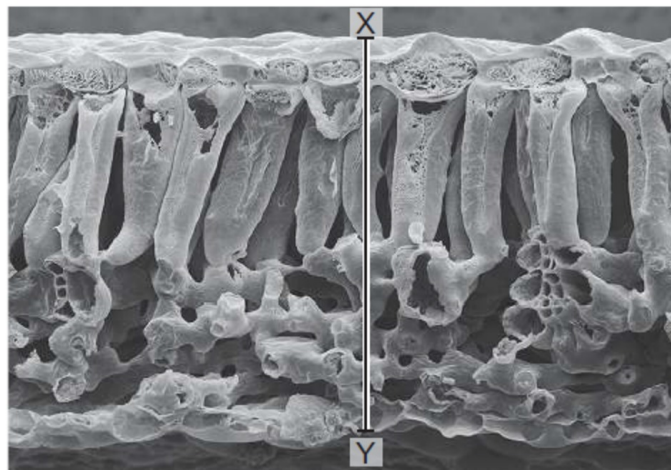
A prokaryotic cell which is $1\text{ }\mu\text{m}$ in diameter, is magnified 50 000 times in an electron micrograph.

What is the diameter of the cell in the electron micrograph?

- A $5 \times 10^{-1}\text{ mm}$
- B $5 \times 10^0\text{ mm}$
- C $5 \times 10^1\text{ mm}$
- D $5 \times 10^2\text{ mm}$

Question 4:

This electron micrograph of a section of a leaf has a magnification of $\times 210$.



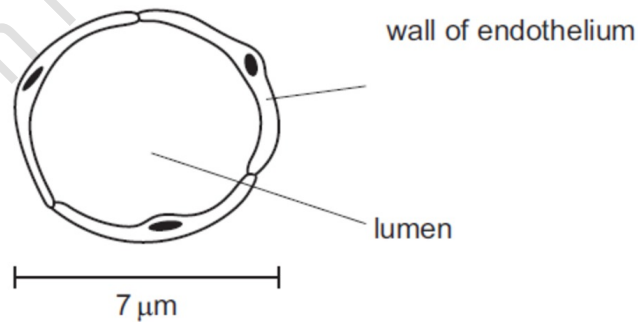
What is the actual length along the line X–Y?

- A $2.43\text{ }\mu\text{m}$
- B $24.3\text{ }\mu\text{m}$
- C $243.0\text{ }\mu\text{m}$
- D $2430\text{ }\mu\text{m}$

Questions (Continued)

Question 5:

The diagram shows a transverse section through a blood capillary.



What is the magnification of the drawing?

- A $\times 200$ B $\times 245$ C $\times 500$ D $\times 5000$

Question 6:

Which calculation is used to find the actual length of an organelle from an image?

- A image size $\div$ magnification
B image size $\times$ magnification
C image size $\times$ resolution
D magnification $\div$ image size

Question 7:

The diagram shows an organelle drawn at a magnification of $\times 20\ 000$.



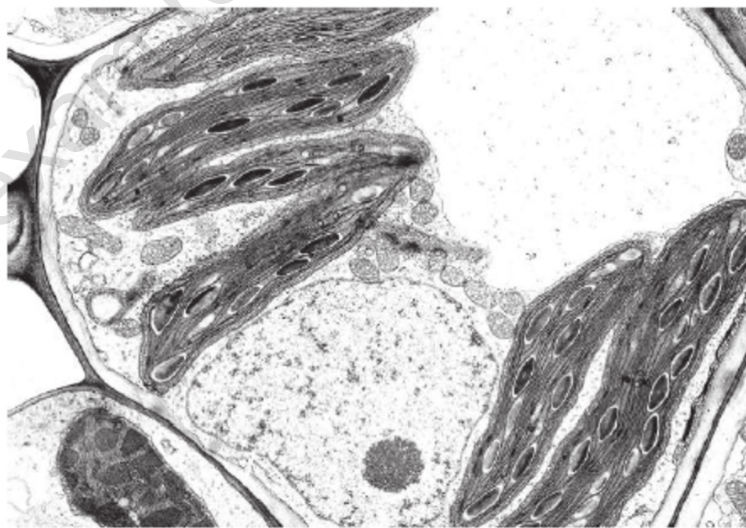
What is the maximum length of the organelle?

- A $3 \times 10^{-1}\ \mu\text{m}$ B $3 \times 10^0\ \mu\text{m}$ C $3 \times 10^1\ \mu\text{m}$ D $3 \times 10^2\ \mu\text{m}$

Questions (Continued)

Question 8:

The photomicrograph of a cell has a 2 cm scale line labelled $5\text{ }\mu\text{m}$.



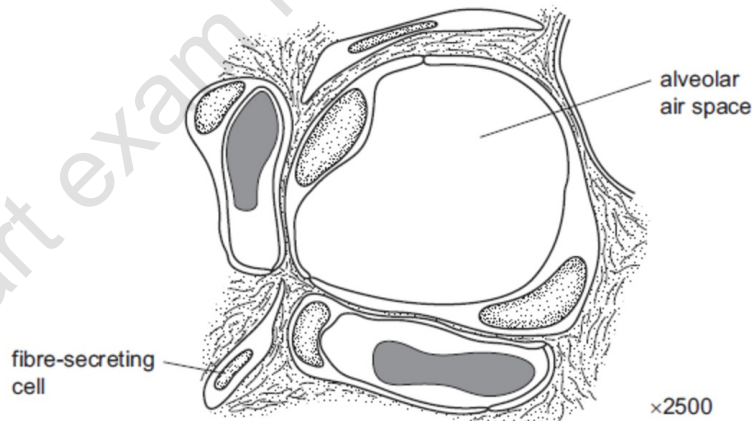
What is the magnification of the photomicrograph?

- A** 1×10^3 **B** 2×10^3 **C** 4×10^3 **D** 5×10^3

Questions (Continued)

Question 9:

The diagram is a drawing made from an electron micrograph showing a cross-section of an alveolus and two adjacent capillaries.

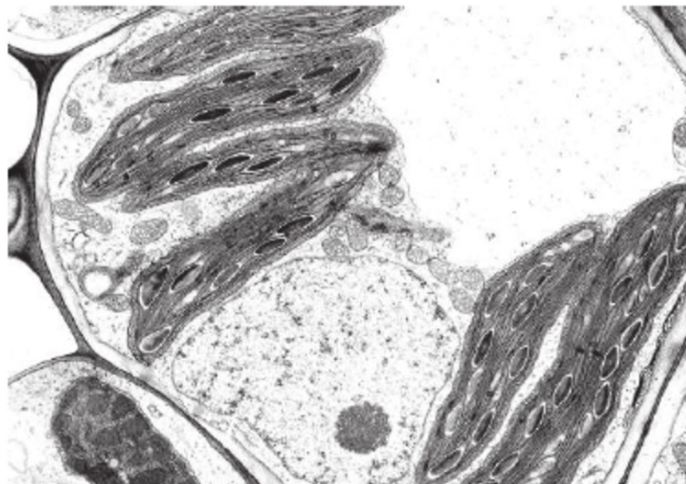


What is the shortest distance travelled by an oxygen molecule diffusing from the alveolar air space into one of the red blood cells?

- A $1.0\ \mu\text{m}$ B $3.0\ \mu\text{m}$ C $10.0\ \mu\text{m}$ D $30.0\ \mu\text{m}$

Question 10:

The diagram shows a photomicrograph. Its magnification is $\times 2800$.



What is the diameter of the nucleolus?

- A $2.5\ \mu\text{m}$ B $5\ \mu\text{m}$ C $10\ \mu\text{m}$ D $20\ \mu\text{m}$