Smart Edu Hub / Smart Exam Resources

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

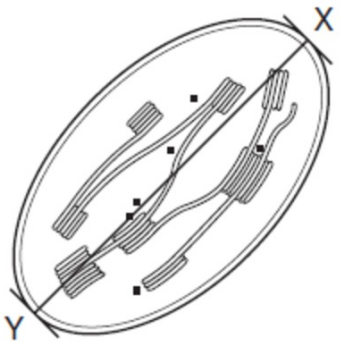
1.1.1-Calculate-Magnification-and-Actual-Size-Set-1-qp

Total Questions: 11

Questions

Question 1:

The diagram shows a chloroplast drawn from an electronmicrograph.



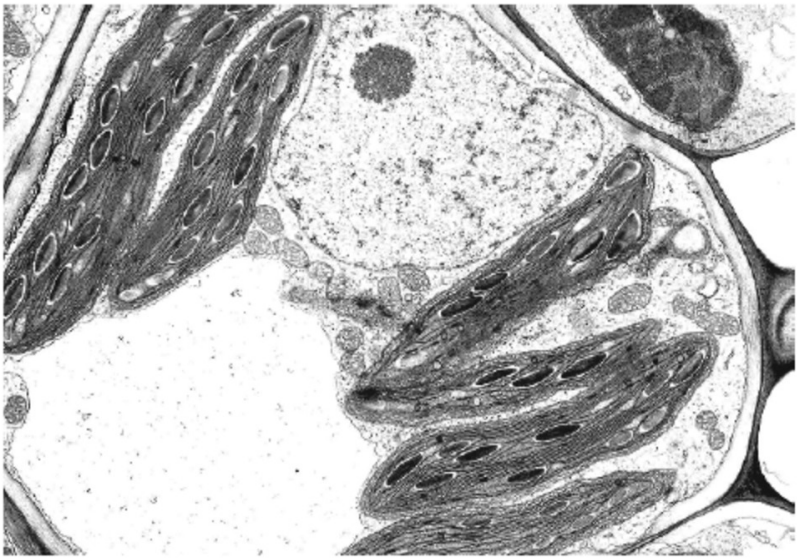
The length of the chloroplast from X to Y is 5000 nm.

What is the magnification of the drawing of the chloroplast?

A ×100 **B** ×1000 **C** ×10 000 **D** ×100 000

Question 2:

The magnification of the photomicrograph is ×4000.



What is the actual size of the nucleolus?

A 1 μm **B** 2 μm **C** 5 μm **D** 20 μm

Questions (Continued)

Question 3:

The electronmicrograph is of a chloroplast.

The length of the chloroplast along the line shown is 80 mm. The actual length of the chloroplast is 10 μm.

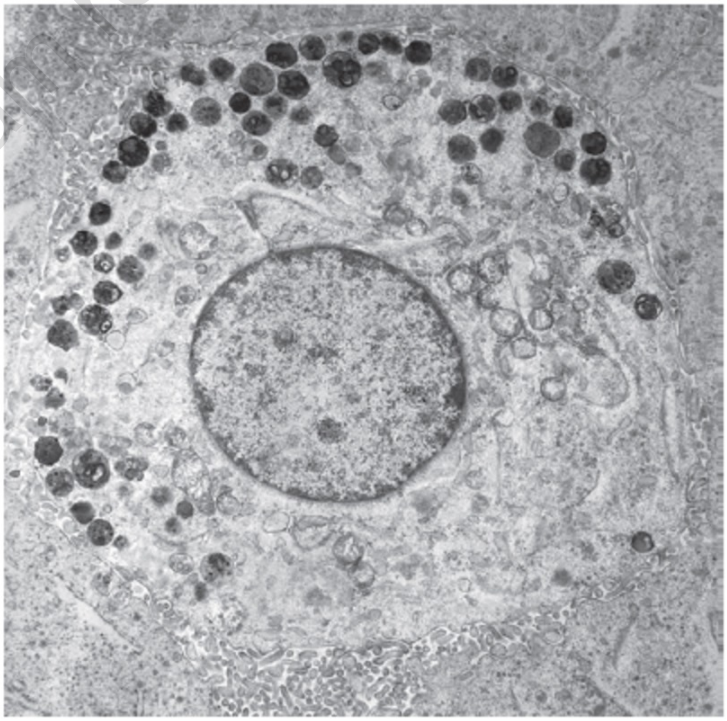
What is the magnification of the chloroplast?

A $\times 8 \times 10^2$ **B** $\times 8 \times 10^3$ **C** $\times 8 \times 10^4$ **D** $\times 8 \times 10^6$

Questions (Continued)

Question 4:

The electronmicrograph shows a cell.



×5700

What is the actual diameter of the nucleus?

A 0.6 μm **B** 6 μm **C** 35 μm **D** 350 μm

Question 5:

Which definition of the magnification of a drawing of a leaf is correct?

A the actual size of an object multiplied by the magnification of the microscope

B the difference in size between an actual object and a drawing of the object

C the increase in size of an object when observed using a microscope

D the size of the drawing of a specimen in comparison to the actual size

Questions (Continued)

Question 6:

A student was presented with a photomicrograph of a cell organelle. The magnification of the photomicrograph is known.

Which calculation of the actual length of the organelle in μm is correct?

A actual size in cm × 100 divided by the magnification

B actual size in mm × 100 divided by the magnification

C image size in cm × 1000 divided by the magnification

D image size in mm × 1000 divided by the magnification

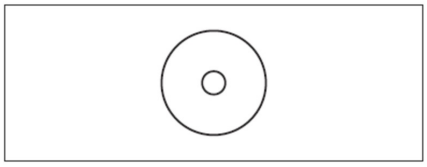
Question 7:

Which equation for calculating the actual size of a specimen, A, or image size, I, or magnification, M, is correct?

A A = M ÷ I **B** A = I × M **C** I = M ÷ A **D** M = I ÷ A

Question 8:

The diagram shows a slide of a transverse section of a stem. This diagram is the same size as the actual slide.



A student observed this slide using a light microscope at a magnification of ×40. The student made a plan drawing of the stem, which was 20 cm in diameter.

The student labelled the plan 'Transverse section of a stem ×40'.

Which statement explains why this label is **not** correct?

A The actual size of the stem should have been checked using an eyepiece graticule.

B The actual size of the stem was smaller under low power.

C The image size in the drawing was larger than ×40.

D The image size in the drawing was smaller than ×40.

Questions (Continued)

Question 9:

A prokaryotic cell which is 0.25 μm in diameter, is magnified 50 000 times on an electron micrograph.

How big will its diameter be in the electron micrograph?

A 1.25×10^{-1} mm

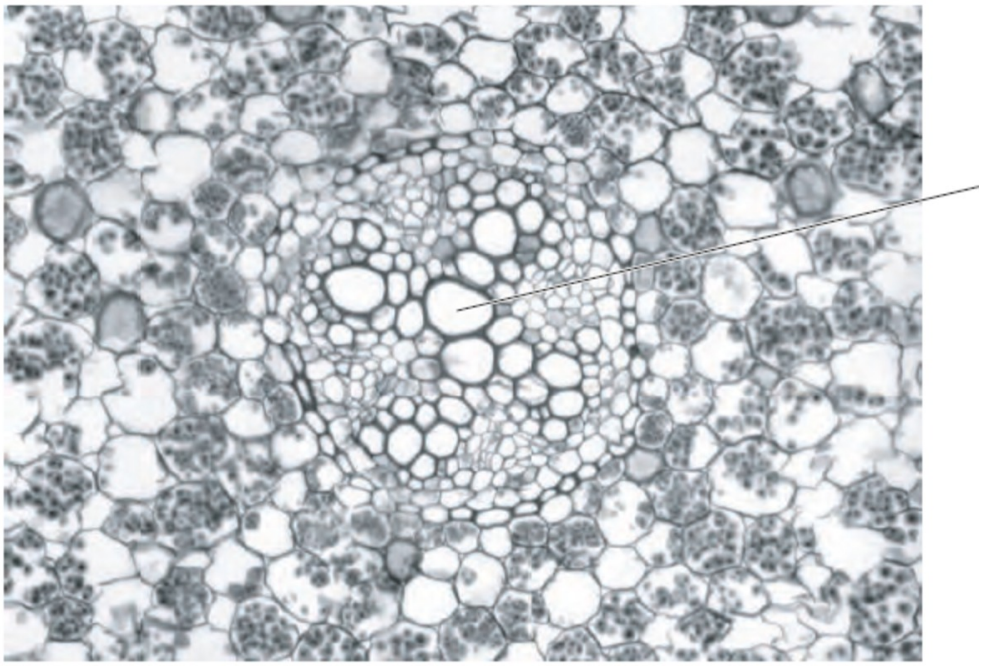
B 1.25×10^{0} mm

C 1.25×10^{1} mm

D 1.25×10^{2} mm

Question 10:

The photomicrograph shows some plant tissues and the magnification is ×200.



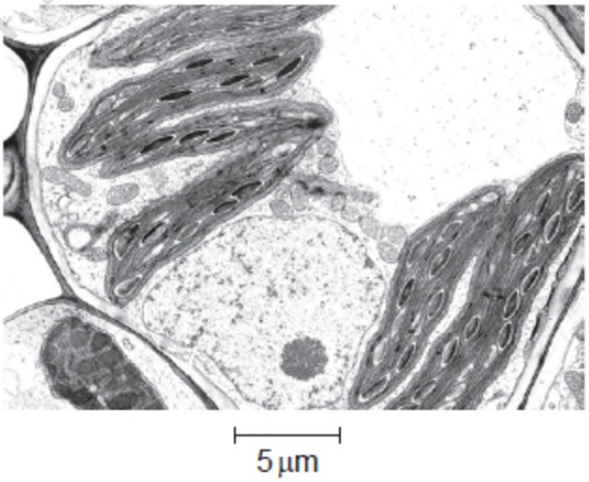
What is the diameter of the cell marked Z?

A 5 μm **B** 10 μm **C** 50 μm **D** 100 μm

Questions (Continued)

Question 11:

The diagram shows the ultrastructure of a cell from a dicotyledonous leaf.



What is the magnification?

A ×280 **B** ×2800 **C** ×3570 **D** ×7000