Smart Edu Hub / Smart Exam Resources

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

1.1.0-Convert-Between-Units-Set-2-qp

Total Questions: 9

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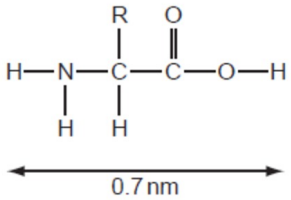
Questions

Question 1:

The diameter of some atoms when they form bonds are given in the table.

atom	single bond / nm	double bond / nm
H	0.060	–
O	0.132	0.110
N	0.140	0.120
C	0.154	0.134

The approximate length of the amino acid shown below was estimated using the figures in the table.



What would be the approximate length of a dipeptide formed using this amino acid?

A 0.9 nm **B** 1.2 nm **C** 1.4 nm **D** 1.7 nm

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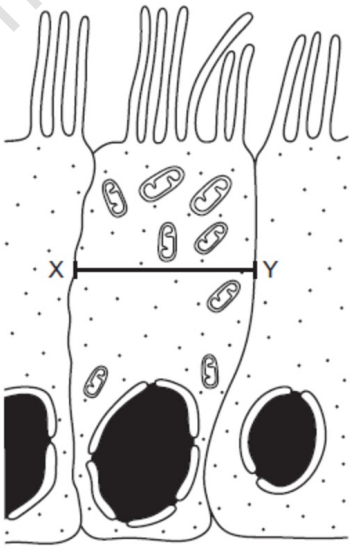
Questions (Continued)

Question 2:

The drawing from an electron micrograph shows a ciliated epithelial cell, magnified ×1500, which is found in the trachea.

Line X-Y shows the widest dimension of the cell.



What is the number of these cells that could be found along a 1 cm length of the trachea?

A 5 **B** 50 **C** 500 **D** 5000

Question 3:

When making measurements in experiments, which methods have parallax errors?

1 using a calibrated eyepiece graticule to measure length

2 using a measuring cylinder to measure volume

3 using a ruler to measure length of a shoot

A 1 and 2 only

B 2 and 3 only

C 3 and 1 only

D 1, 2 and 3

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Questions (Continued)

Question 4:

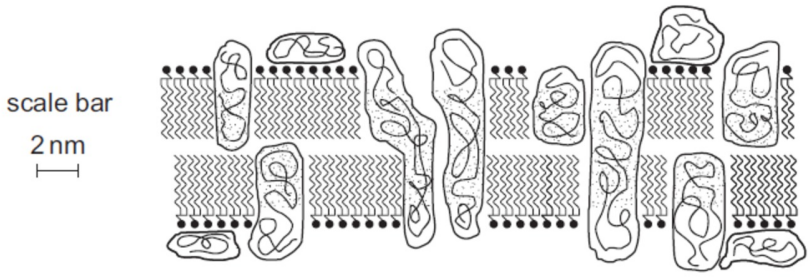
A student was asked to estimate the concentration of glucose in a solution using the Benedict's test. The student was provided with a 1.0 mol dm^{-3} glucose solution and was told to make a 0.6 mol dm^{-3} solution by proportional dilution.

Which row shows the correct volumes of both 1.0 mol dm^{-3} glucose solution and distilled water needed to make the 0.6 mol dm^{-3} solution?

	volume of 1.0 mol dm^{-3} glucose solution / cm^3	volume of distilled water / cm^3
A	12	8
B	10	10
C	8	12
D	6	14

Question 5:

The diagram shows part of a membrane around a vacuole of a plant cell.



What is the width of the membrane?

A 7.5×10^{-3} m

B 7.5×10^{-6} m

C 7.5×10^{-9} m

D 7.5×10^{-12} m

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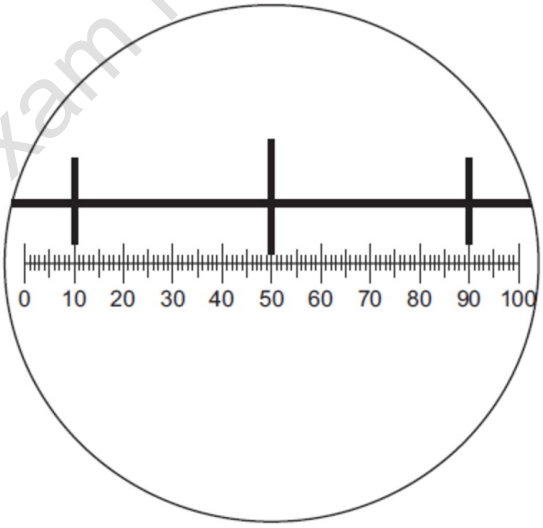
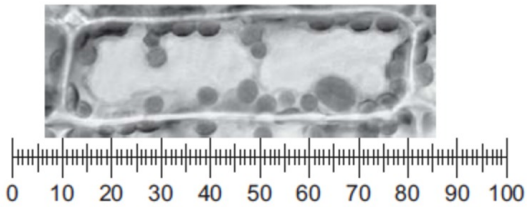
Questions (Continued)

Question 6:

The diagram shows a stage micrometer on which the small divisions are 0.1 mm. It is viewed through an eyepiece containing a graticule.



The stage micrometer is replaced by a slide of a plant cell.



What is the length of the nucleus?

A 0.8 mm **B** 8 μm **C** 25 μm **D** 200 μm

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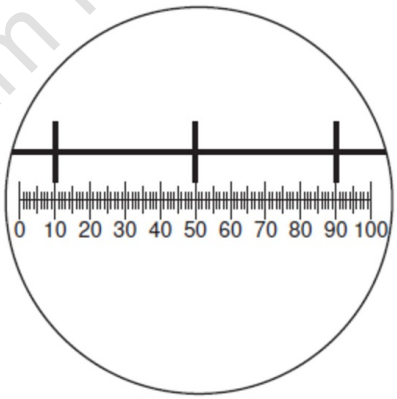
Questions (Continued)

Question 7:

The diagram shows a stage micrometer, with divisions 0.1 mm apart, viewed through an eyepiece containing a graticule.



The same eyepiece is now used to examine a blood smear.

How many graticule divisions will cover the diameter of a white cell of 10 μm?

A 1 **B** 4 **C** 10 **D** 20

Question 8:

The diameter of living cells varies considerably.

The typical diameters are

a eukaryote, such as a white blood cell	1.5×10^1 μm
a prokaryote, such as *Streptococcus*	7.5×10^2 nm

Use these measurements to find the maximum number of each cell type which could fit along a line 1 cm long.

	number of white blood cells	number of *Streptococcus cells*
A	6.7×10^3	1.3×10^5
B	6.7×10^2	1.3×10^4
C	6.7×10^1	1.3×10^3
D	6.7×10^0	1.3×10^2

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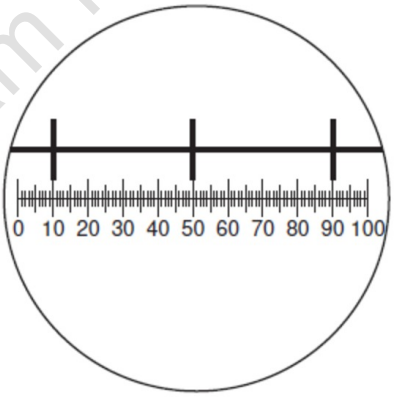
Questions (Continued)

Question 9:

The diagram shows a stage micrometer, with divisions 0.1 mm apart, viewed through an eyepiece containing a graticule.



The same eyepiece is now used to examine a blood smear.

How many graticule divisions will cover the diameter of a white cell of 10 μm?

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