

Cell Structure Multiple Choice

Question Paper 1

Level	A Level
Subject	Biology
Exam Board	OCR
Module	Foundations in Biology
Topic	Cell Structure
Booklet	Question Paper 1

Time allowed: 19 minutes

Score: /14

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E
>69%	56%	50%	42%	34%	26%

Question 1

Which organelle, **A** to **D**, is **not** involved in the production and secretion of enzymes in eukaryotes?

[1]

- A. golgi apparatus
- B. ribosomes
- C. smooth endoplasmic reticulum
- D. vesicle



Question 2

The bacterium *Sorangium cellulosum* and the fungus *Armillaria mellea* are both found in soil.

Which of the rows, **A** to **D**, correctly shows the structures present in each organism? **[1]**

	Free ribosomes in cytoplasm	Membrane bound nucleus	DNA in a single loop	Cell wall present
A	<i>S. cellulosum</i> and <i>A. mellea</i>	<i>A. mellea</i>	<i>S. cellulosum</i>	<i>S. cellulosum</i> and <i>A. mellea</i>
B	<i>S. cellulosum</i> and <i>A. mellea</i>	<i>A. mellea</i>	<i>S. cellulosum</i> and <i>A. mellea</i>	<i>S. cellulosum</i> and <i>A. mellea</i>
C	<i>S. cellulosum</i>	<i>S. cellulosum</i> and <i>A. mellea</i>	<i>S. cellulosum</i>	<i>A. mellea</i>
D	<i>A. mellea</i>	<i>S. cellulosum</i>	<i>S. cellulosum</i> and <i>A. mellea</i>	<i>S. cellulosum</i>

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Question 3

Which of the following best describes a microscope with *high resolution*?

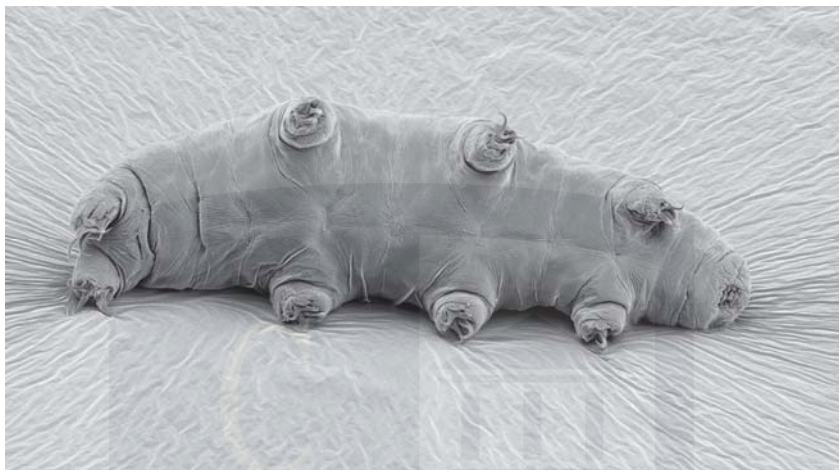
- A. The microscope can distinguish structures that are very close together.
- B. The microscope can view structures that are very small.
- C. The microscope is capable of high magnification.
- D. The microscope has an in-built eyepiece graticule.

[1]



Question 4

The image below shows a tardigrade, *Echiniscus granulatus*, viewed from the underneath. The magnification is $\times 110$.



How long is the tardigrade in real life?

- A $115\mu\text{m}$
- B $1.14 \times 10^{-5}\text{m}$
- C $8.64 \times 10^{-4}\text{m}$
- D 0.116mm

[1]

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Question 5

Which of the options, **A** to **D**, occurs in the nucleus of a cell?

- A. synthesis of enzymes
- B. synthesis of RNA
- C. modification of polypeptides
- D. synthesis of carbohydrates

[1]



Question 6

Microscopes vary in their magnification and resolution.

Which of the rows, **A** to **D**, in the table below is correct?

	Light microscope		Transmission electron microscope		Scanning electron microscope	
	Magnification	Resolution (nm)	Magnification	Resolution (nm)	Magnification	Resolution (nm)
A	× 1500	200	× 10 000	0.2	× 50 000	0.2
B	× 400	100	× 500 000	10.0	× 100 000	0.2
C	× 1500	200	× 500 000	0.2	× 100 000	0.2
D	× 1500	100	× 500 000	10.0	× 100 000	10.0

[1]

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Question 7

Which of the following structures, **A** to **D**, are found in prokaryotes **and** in eukaryotes?

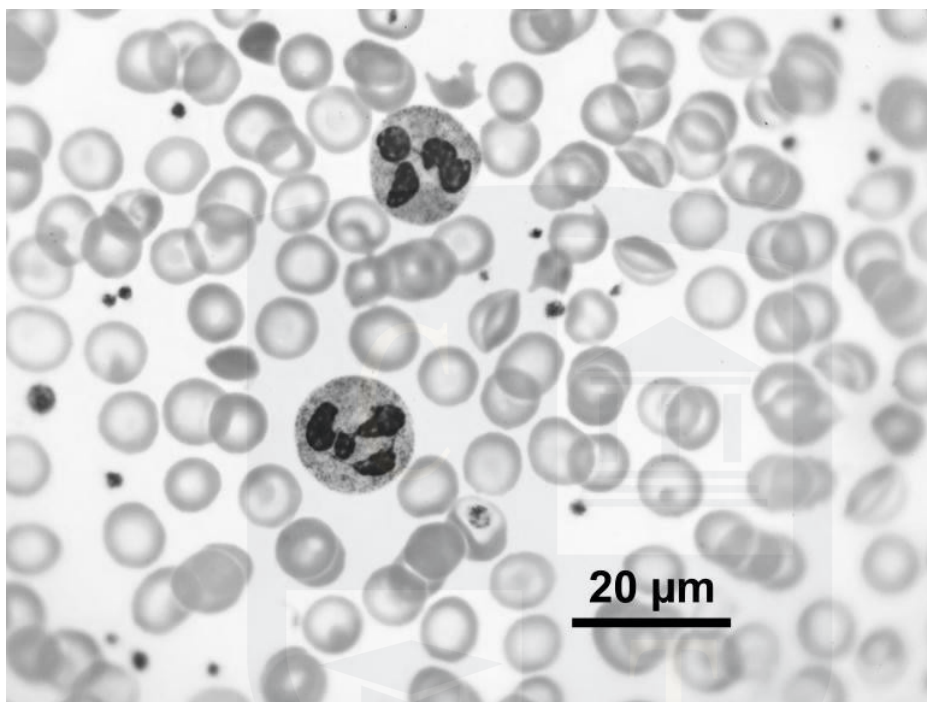
- A. a cell wall made of peptidoglycan
- B. circular genomic DNA
- C. a nucleus surrounded by a nuclear membrane
- D. ribosomes

[1]



Question 8

Using the light micrograph below and the formula $\frac{4}{3}\pi r^3$ what is the volume of a neutrophil?



- A $2 \mu\text{m}^3$
- B $20 \mu\text{m}^3$
- C $200 \mu\text{m}^3$
- D $2000 \mu\text{m}^3$

[1]

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Question 9

Three types of microscope are listed below.

Select the row that shows the correct use for each type of microscope.

Type of microscope and what it is used to observe			
	Light microscope	Transmission electron microscope	Laser scanning confocal microscope
A	an object at a certain depth within a cell	cell surfaces	organelles
B	an object at a certain depth within a cell	cell surfaces	whole cells and tissues
C	whole cells and tissues	organelles	cell surfaces
D	whole cells and tissues	organelles	an object at a certain depth within a cell

[1]

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Question 10

Cyanobacteria are photoautotrophs and fossil records confirm their existence 3.5 billion years ago.

Which row describes the structure of cyanobacteria?

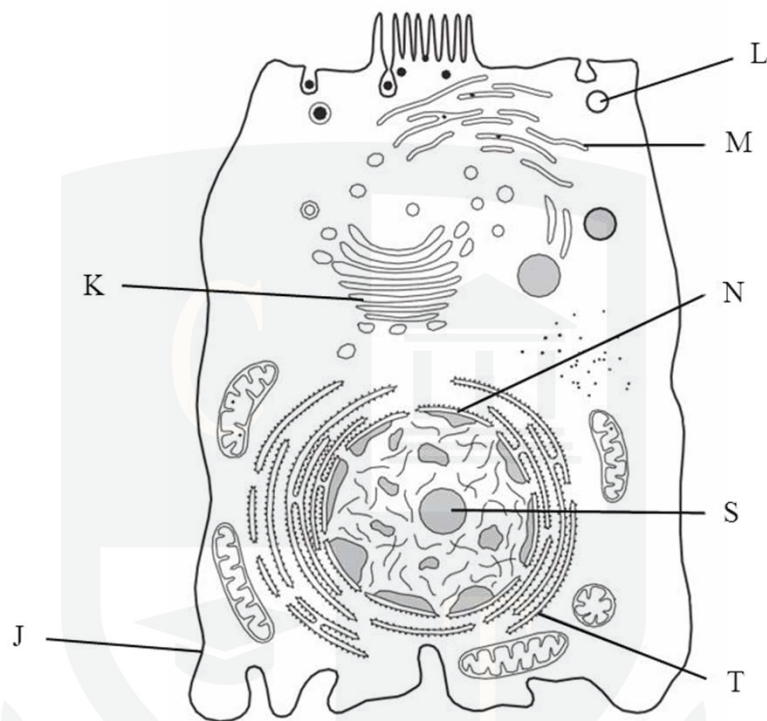
	Feature					
	Nucleus	Circular DNA	Mitochondria	Ribosomes	Chloroplast	Cell wall
A	✓		✓		✓	
B			✓		✓	✓
C	✓	✓		✓		
D		✓		✓		✓

[1]

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Question 11

Fig. 8.1 shows an animal cell.



Which option describes the correct sequence of organelles involved during the production and secretion of a protein from this cell?

- A** S, K, L, J **B** T, K, L, J **C** T, M, L, J **D** S, T, K, L

[1]

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Question 12

Which of the following statements is/are true?

Statement 1: Microtubules are part of the '9 + 2' formation in bacterial flagella.

Statement 2: Microtubules can be prevented from functioning by a respiratory inhibitor.

Statement 3: Microtubules are involved in moving chromosomes from the equator to the poles of the cell during mitosis.

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

[1]

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Question 13

A range of microscopes are available for scientific research. Each type of microscope has a different use.

Select the row that shows the correct uses for all the types of microscope.

Type of microscope and what it is used to observe				
	Light microscope	Transmission electron microscope	Scanning electron microscope	Laser scanning confocal microscope
A	an object at a certain depth within a cell	organelles	cell surfaces	whole cells and tissues
B	cell surfaces	an object at a certain depth within a cell	whole cells and tissues	organelles
C	whole cells and tissues	organelles	cell surfaces	an object at a certain depth within a cell
D	organelles	an object at a certain depth within a cell	whole cells and tissues	cell surfaces

[1]

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Question 14

Which of the following statements describes an organelle which is **not** membrane bound?

- A. contains cristae
- B. modifies and packages proteins
- C. contains digestive enzymes
- D. is made of rRNA and protein

[1]

