

0 1

This question is about the cell cycle.

0 1 . 1

Chromosomes are copied during the cell cycle.

Where are chromosomes found?

[1 mark]Tick **one** box.

Cytoplasm

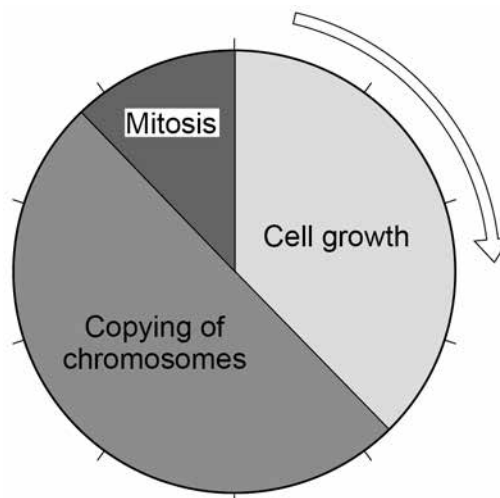
Nucleus

Ribosomes

Vacuole

0 1 . 2

What is the name of a section of a chromosome that controls a characteristic?

[1 mark]**Figure 1** shows information about the cell cycle.**Figure 1**

0 1 . 3 Which stage of the cell cycle in **Figure 1** takes the most time?

[1 mark]

Tick **one** box.

Cell growth

Copying of chromosomes

Mitosis

0 1 . 4 During mitosis cells need extra energy.

Which cell structures provide most of this energy?

[1 mark]

Tick **one** box.

Chromosomes

Cytoplasm

Mitochondria

Ribosomes

0 1 . 5 The cell cycle in **Figure 1** takes two hours in total.

The cell growth stage takes 45 minutes.

Calculate the time taken for mitosis.

[2 marks]

Time = _____ minutes

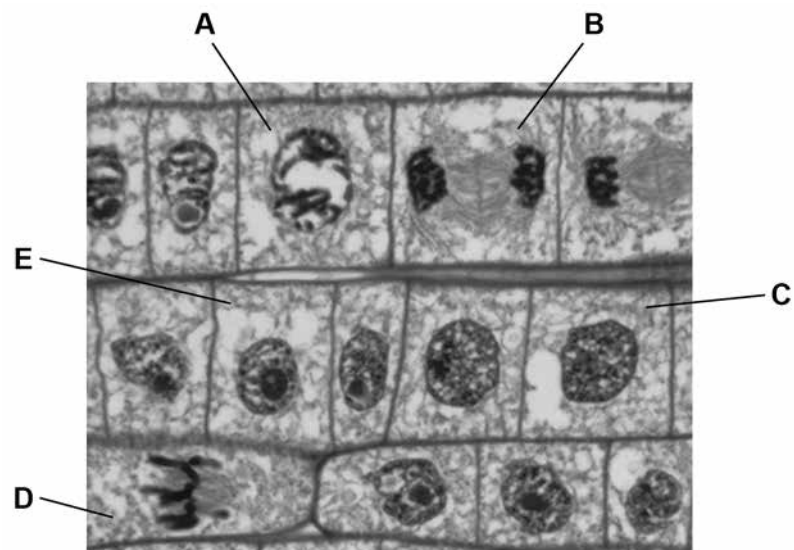
Turn over ►



Figure 2 shows some cells in different stages of the cell cycle.

Do not write
outside the
box

Figure 2



0 1 . 6 Which cell is **not** dividing by mitosis?

[1 mark]

Tick **one** box.

A	<input type="checkbox"/>
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B	<input type="checkbox"/>
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C	<input type="checkbox"/>
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D	<input type="checkbox"/>
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0 1 . 7 Cell **E** in **Figure 2** contains 8 chromosomes.

Cell **E** divides by mitosis.

How many chromosomes will each new cell contain?

[1 mark]

Tick **one** box.

2

4

8

16

0 1 . 8 Why is mitosis important in living organisms?

[1 mark]

Tick **one** box.

To produce gametes

To produce variation

To release energy

To repair tissues

Turn over for the next question



Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1	nucleus		1	AO1 4.1.2.1
01.2	gene(s)	allow allele(s)	1	AO1 4.6.1.4
01.3	copying of chromosomes		1	AO2 4.1.2.2
01.4	mitochondria		1	AO1 4.1.1.2
01.5	60 – 45 or 120 – 105 15 (minutes)	an answer of 15 (minutes) scores 2 marks	1 1	AO2 4.1.2.2
01.6	C		1	AO2 4.1.2.2
01.7	8		1	AO2 4.1.2.2
01.8	to repair tissues		1	AO1 4.1.2.2
Total			9	