

0 5

Cell division is needed for growth and for reproduction.

0 5 . **1****Table 3** contains three statements about cell division.Complete **Table 3**.**[2 marks]**Tick **one** box for each statement.**Table 3**

Statement	Statement is true for		
	Mitosis only	Meiosis only	Both mitosis and meiosis
All cells produced are genetically identical			
In humans, at the end of cell division each cell contains 23 chromosomes			
Involves DNA replication			



Bluebell plants grow in woodlands in the UK.

- Bluebells can reproduce sexually by producing seeds.
- Bluebells can also reproduce asexually by making new bulbs.

0 5 . 2

One advantage of asexual reproduction for bluebells is that only **one** parent is needed.

Suggest **two** other advantages of asexual reproduction for bluebells.

[2 marks]

1

2

0 5 . 3

Explain why sexual reproduction is an advantage for bluebells.

[4 marks]

8

Turn over ►



Question	Answers	Extra information	Mark	AO / Spec. Ref.																				
05.1	<table border="1"> <thead> <tr> <th></th> <th colspan="3">statement is true for</th> </tr> <tr> <th></th> <th>mitosis only</th> <th>meiosis only</th> <th>both mitosis and meiosis</th> </tr> </thead> <tbody> <tr> <td>all cells produced are genetically identical</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>in humans, at the end of cell division each cell contains 23 chromosomes</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>involves DNA replication</td> <td></td> <td></td> <td>✓</td> </tr> </tbody> </table> <p> 3 correct = 2 marks 2 correct = 1 mark 0 or 1 correct = 0 marks </p>		statement is true for				mitosis only	meiosis only	both mitosis and meiosis	all cells produced are genetically identical	✓			in humans, at the end of cell division each cell contains 23 chromosomes		✓		involves DNA replication			✓		2	AO1 4.1.2.2 4.6.1.2
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05.2	any two from: <ul style="list-style-type: none"> • many offspring produced • takes less time • (more) energy efficient • genetically identical offspring • successful traits propagated / maintained / passed on (due to offspring being genetically identical) • no transfer of gametes or seed dispersal • not wasteful of flowers / pollen / seeds • colonisation of local area 	ignore references to one parent only allow asexual is faster allow offspring are clones allow no vulnerable embryo stage allow no need for animals must imply local area	2	AO3 4.6.1.1 4.6.1.3																				

Question	Answers	Extra information	Mark	AO / Spec. Ref.
05.3	genetic variation (in offspring)	allow bluebell example described (max 3 if not bluebell)	1	AO1
	(so) better adapted survive	allow reference to natural selection or survival of the fittest	1	AO1
	(and) colonise new areas by seed dispersal or can escape adverse event in original area (by living in new area)	must imply new area	1	AO3
	many offspring so higher probability some will survive		1	AO3 4.6.1.1 4.6.2.1 4.6.1.3 4.7.1.1
Total			8	