

4 Meiosis and mitosis are involved in cell division.

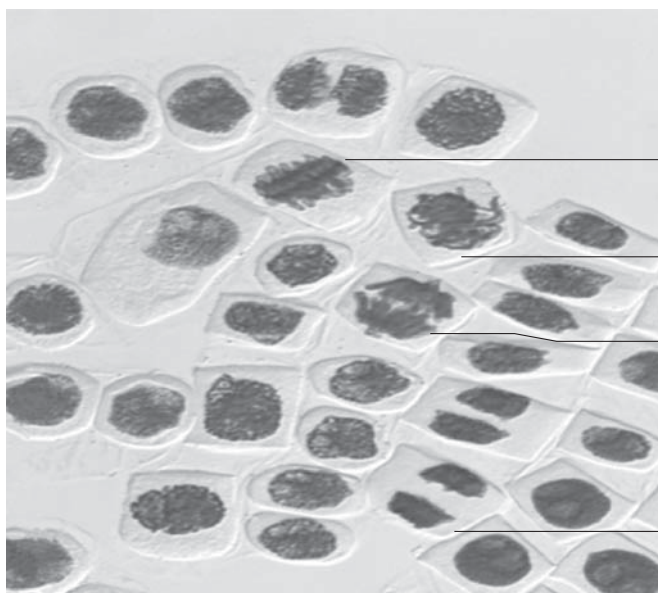
- (a) The table below gives some statements about cell division. Place a tick (✓) in the box if **meiosis** is involved.

(2)

Statements about cell division	Meiosis is involved
Required for both sexual and asexual reproduction	
Produces gametes	
Crossing over can occur	
Occurs in mammals but not flowering plants	

- (b) The photograph below shows some cells undergoing **mitosis**. Each of the cells A, B, C and D is in a different stage of mitosis. Write the name of the stage next to the appropriate letter.

(4)



A

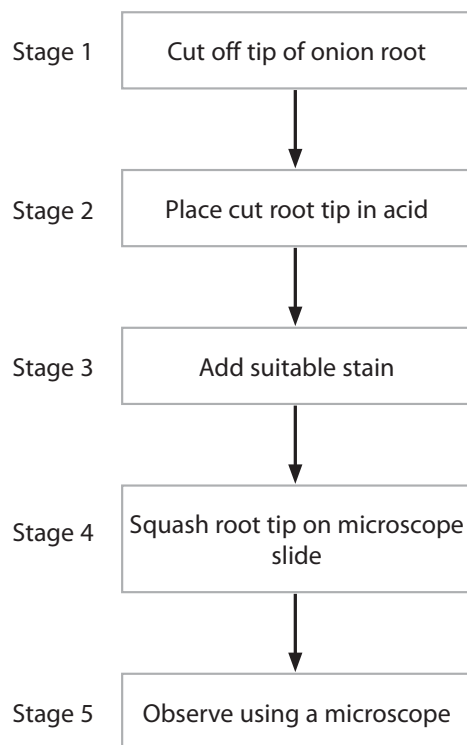
B

C

D



(c) The diagram below shows some stages in the production of a root tip squash to observe mitosis.



(i) Suggest why the **tip** of the onion root is used.

(1)

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(ii) Suggest why acid is used in stage 2.

(1)

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(iii) Name a suitable stain for the root tip squash.

(1)

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- (iv) There are various risks associated with the production of a root tip squash. Suggest **two** risks and the precautions you would take to minimise each risk.

(2)

1

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2

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(Total for Question 4 = 11 marks)



N 3 4 4 6 4 A 0 1 1 2 4