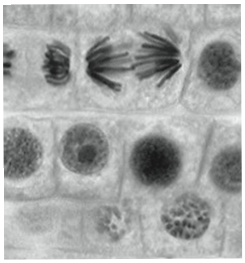
Do not write outside the box

1 The diagram shows root cells undergoing cell division. The cells are at various stages of dividing.



1 (a) (i) Name the type of cell division that is shown in the diagram.

Mitosis [1 mark]

(1 mark)

1 (a) (ii) What happens to the genetic material before the cell divides?

Doubles/replicates/copies itself [1 mark]

(1 mark)

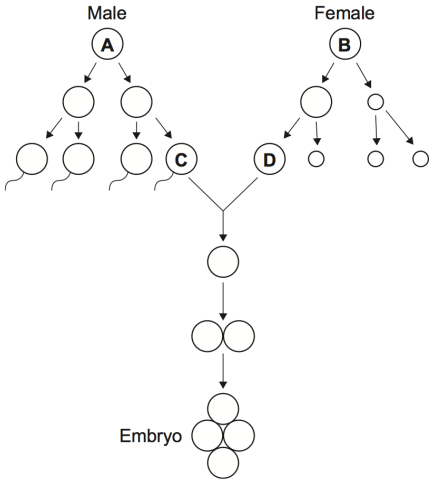
1 (a) (iii) Why is this type of cell division important for an organism?

Growth [1 mark]
Cell replacement or tissue repair [1 mark]
Asexual reproduction [1 mark]

Make sure you don't say 'repair cells'. Mitosis is for repairing tissue, not cells.

(2 mark)

1 (b) The diagram shows some types of cell division that happen during human reproduction.



1 (b) (i) Name the type of cell division that produces cell D from cell B.

Meiosis [1 mark]

(1 mark)

Do not write outside the box

1 (b) (ii) Why is this type of cell division important in producing cell C or cell D?

Reduces or halves the number of chromosomes [1 mark]

Ensure the embryo/offspring have the correct or double set of chromosomes. [1 mark]

(2 mark)

1 (b) (iii) Meiosis and mitosis are different types of division in human cells. Compare the two processes by referring to where each takes place and the kind of products that are made.

meiosis	**mitosis**
sexual	asexual
gametes	growth
ovary or testes	all other cells
half number of chromsomes	same number of chromosomes
haploid or 23 chromosomes	diploid or 46 chromosomes
variation possible or not identical	or no variation or identical
4 cells produced	2 cells produced
2 divisions	1 division

This is a useful question to get under your belt as it could well be a 6 mark question. For this one, any five of the list will get you the marks.

(5 marks)