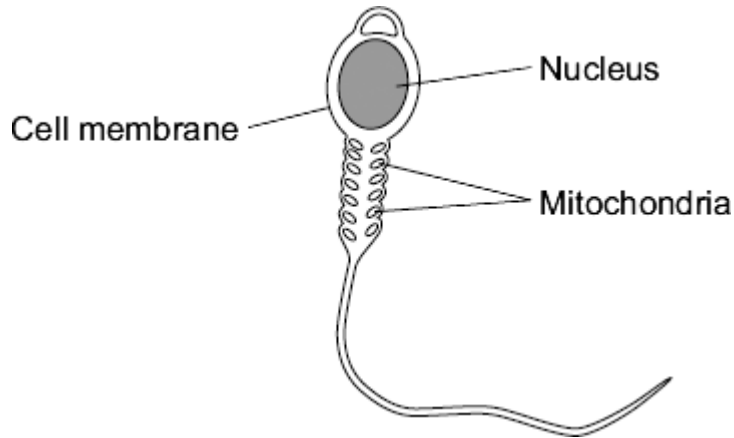


1

Cells in the human body are specialised to carry out their particular function.

(a) The diagram shows a sperm cell.



The sperm cell is adapted for travelling to, then fertilising, an egg.

(i) How do the mitochondria help the sperm to carry out its function?

.....
.....

(1)

(ii) The nucleus of the sperm cell is different from the nucleus of body cells.

Give **one** way in which the nucleus is different.

.....
.....

(1)

(b) Stem cells from human embryos are used to treat some diseases in humans.

Explain why.

.....
.....
.....
.....

(2)

(Total 4 marks)

Mark schemes

1

(a) (i) release energy

allow provide / supply / give energy

*do **not** accept produce / create / generate / make energy*

*do **not** allow release energy for respiration*

1

(ii) contain half the (number of) chromosomes **or** contains
one set of chromosomes **or** contains 23 chromosomes

*allow genetic information / DNA / genes / alleles instead of
chromosomes*

accept haploid

1

(b) any two from:

- (stem cells) are unspecialised / undifferentiated
allow description eg 'no particular job'
- are able to become differentiated
or can form other types of cell / tissue / organ
- stem cells can / able to divide / multiply

2

[4]