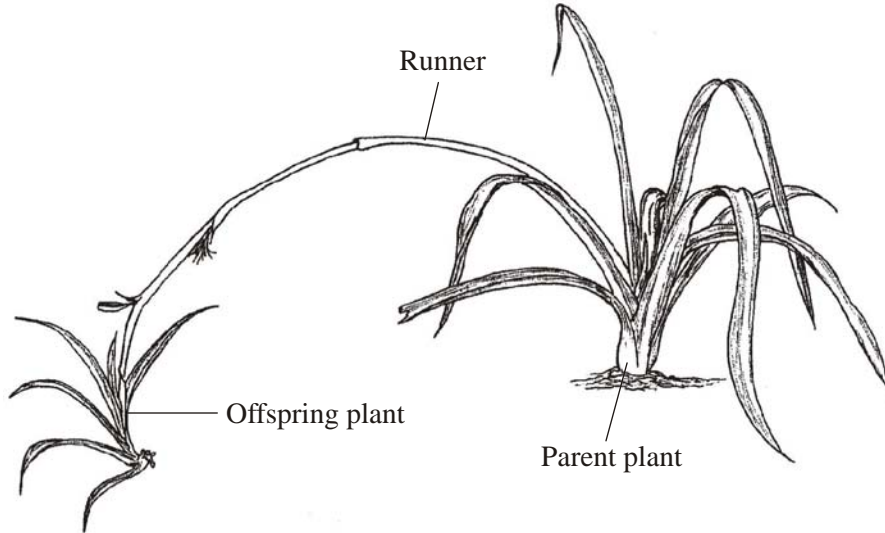


Cell division

1. The diagram shows a spider plant during one type of reproduction.



Complete the sentences using words from the box.

asexual	characteristics	chromosomes
gametes	genes	mitosis
		sexual

- (a) The colour and shape of the leaves of a spider plant are known as (1)
- (b) The shape of the leaves is controlled by (1)
- (c) The thread-like structures inside the nucleus of the cells are called (1)
- (d) The spider plant produces new cells in the runner by a process called (1)
- (e) This type of reproduction is called reproduction. (1)

(Total 5 marks)

2. **Diagram 1** shows the nucleus of a body cell as it begins to divide by mitosis.

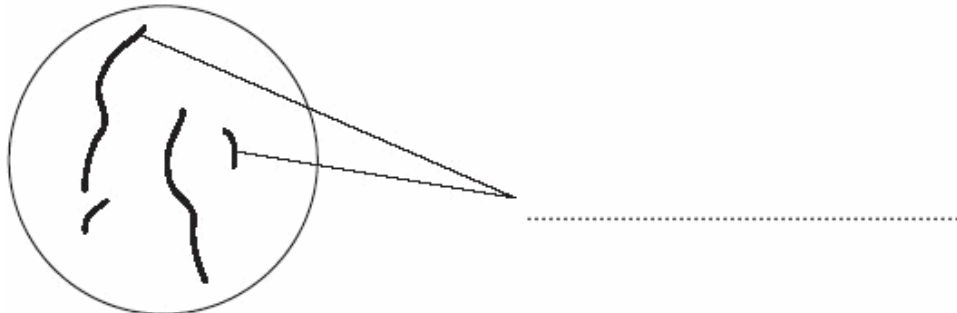


Diagram 1

(a) Use a word from the box to label **Diagram 1**.

alleles	chromosomes	gametes
---------	-------------	---------

(1)

(b) Complete **Diagram 2** to show what the nucleus of one of the cells produced by this mitosis would look like.

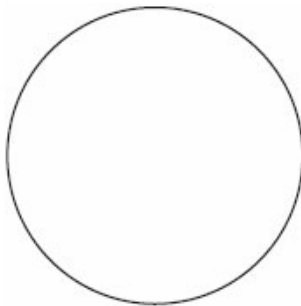


Diagram 2

(1)

(c) Stem cells from a recently dead embryo can be grown in special solutions.

Some facts about stem cells are given below.

- Stem cells from an embryo can grow into any type of tissue.
- Stem cells may grow out of control, to form cancers.
- Large numbers of stem cells can be grown in the laboratory.
- Stem cells may be used in medical research or to treat some human diseases.
- Patients treated with stem cells need to take drugs for the rest of their life to prevent rejection.
- Collecting and growing stem cells is expensive.

Use **only** the information above to answer these questions.

(i) Give **two** advantages of using stem cells.

1

.....

2

.....

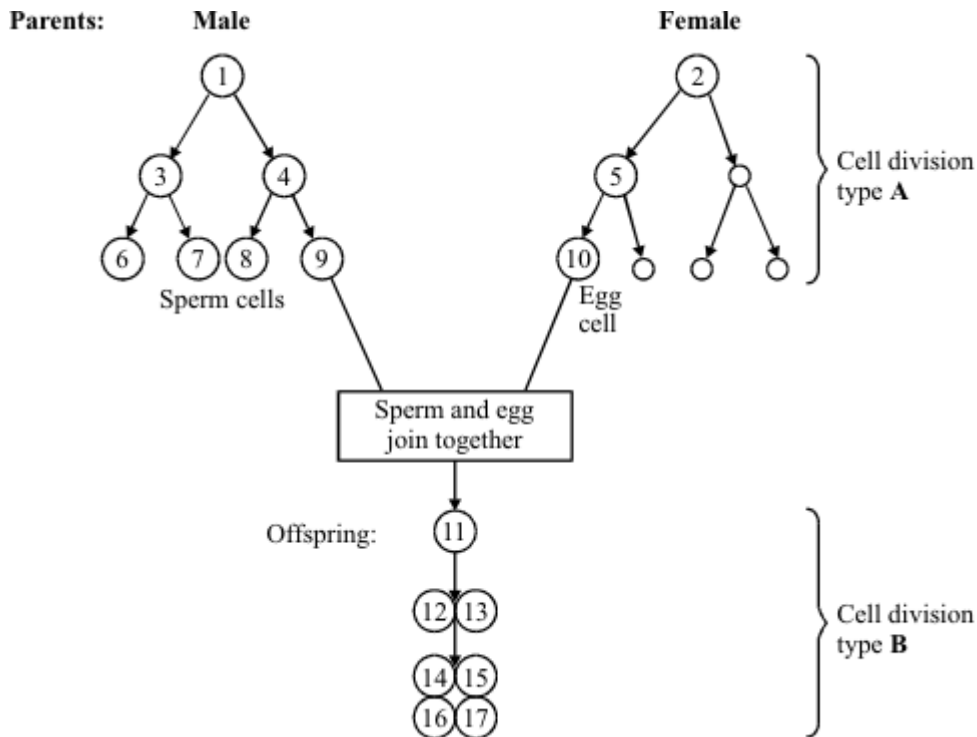
(2)

(ii) Give **two** disadvantages of using stem cells.

- 1
-
- 2
-

(2)
(Total 6 marks)

3. The diagram shows two patterns of cell division. Cell division type **A** is used in gamete formation. Cell division type **B** is used in normal growth.



(a) Name the two types of cell division, **A** and **B**, shown in the diagram.

- Type **A**
- Type **B**

(2)

(b) Name the process in which an egg and sperm join together.

-

(1)

(c) Cell **1** contains 46 chromosomes. How many chromosomes will there be in:

- (i) cell **10**;
- (ii) cell **14**?

(1)

(Total 5 marks)