

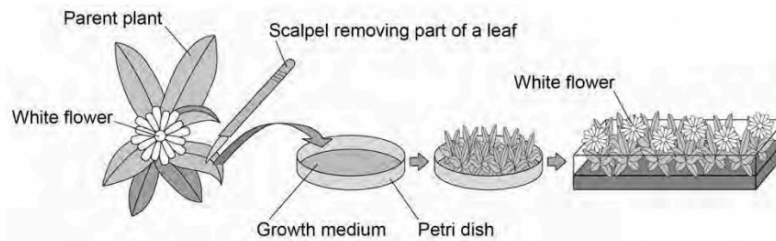
(Stem cells and their uses (treatments, issues))

Q1.a)(2018)

Scientists can clone plants using tissue culture.

Figure 4 shows the process of tissue culture.

Figure 4



Why might scientists want to clone plants?

[1 mark]

Tick **one** box.

To create new species of plants.

☐

To introduce variation into plants.

☐

To protect endangered plants from extinction.

☐

To reduce disease resistance in plants.

☐

Q1.b)(2018)

The growth medium in **Figure 4** helps the plants to grow.

Name **one** substance in the growth medium.

[1 mark]

Q2.(2018)

What is the advantage of cloning plants using tissue culture?

[1 mark]

Tick **one** box.

No special equipment is needed.

☐

Plants can be produced quickly.

☐

The flowers are all different colours.

☐

The offspring are all genetically different.

☐

Q3.(2019)

Which **one** of the following does **not** contain stem cells?

[1 mark]

Tick (✓) **one** box.

Bone marrow

☐

Embryos

☐

Hair

☐

Meristem tissue

☐

Q4.(2020)

Stem cells are cells which have **not** yet been specialised to carry out a particular job.

Bone marrow cells are one example of stem cells.

Explain how a transplant of bone marrow cells can help to treat medical conditions.

[2 marks]

Q5.(2022)

Name **one** medical condition that could be treated using heart cells created from an embryo.

[1 mark]

Q6.(2022)

Give **one** reason why a patient may **not** want to be treated with heart cells created from an embryo.

[1 mark]

Q7.(2023)

Tissue in the tip of a plant root contains stem cells.

Stem cells can differentiate into any type of cell.

Name the type of tissue in plants that contains stem cells.

[1 mark]
