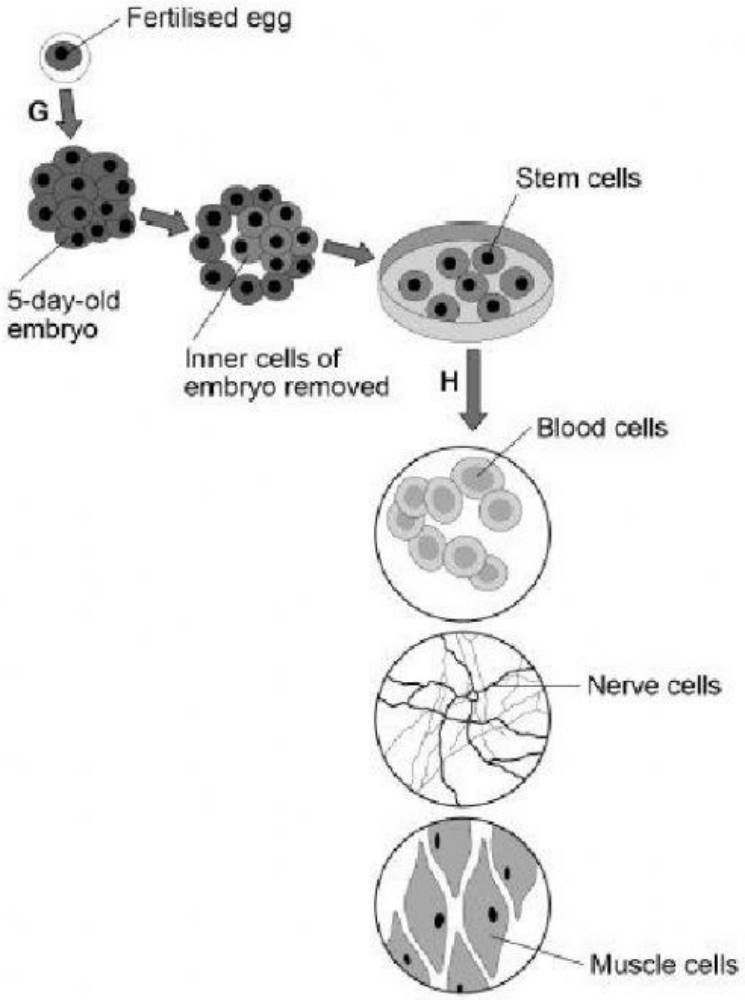
Q4. The diagram shows how cells from human embryos can be used to grow 'replacement body parts' for humans.



(d) Stem cells become specialised in the process labelled **H** in the diagram.

What is the process labelled **H**?

Tick **one** box.

Differentiation	☐
Evolution	☐
Genetic modification	☐
Selective breeding	☐

(1)

(e) Which **two** parts would be found in all the cells in the diagram.

Tick **two** boxes.

Cell membrane	☐
Cell wall	☐
Chloroplasts	☐
Cytoplasm	☐
Plasmids	☐

(2)

(f) Why might stem cells from human embryos be more useful than stem cells from adults?

_____

_____

(1)

(g) Some parents have stem cells from the umbilical cord of their baby collected and stored.

These stem cells can be used to treat diseases in the child later in life.

Why might stem cells from their own umbilical cord be used rather than stem cells from another embryo?

Tick **one** box.

Less risk of rejection of umbilical cord stem cells.	☐
Stem cells from another embryo can treat more diseases.	☐
Umbilical cord stem cells are older.	☐

(1)

(h) Some medical uses of stem cells are still experimental.

Why do some scientists have concerns about the use of stem cells?

_____

_____

(1)

(i) Some people object to the use of embryonic stem cells because of religious beliefs.

Give **one** other ethical concern about the use of embryonic stem cells?

Q4. (d) differentiation

1

(e) cell membrane

1

cytoplasm

1

(f) (stem cells from embryos) can become more types of cell

allow converse

allow (stem cells from embryos) are pluripotent

1

(g) less risk of rejection of umbilical cord stem cells

1

(h) could cause cancer

1

(i) any **one** from:

- embryos are created (for this purpose)
- embryos are destroyed
- the embryos do not develop into a foetus / child

ignore religious objections

1