

7 Stem cells can differentiate into specialised cells and tissues.

(a) There are about 23 000 genes in a human body cell. The table below shows the number of genes that have not been switched off, in three different cells, A, B and C.

Cell	Number of genes that have not been switched off
A	11 000
B	18 000
C	23 000

Suggest which of these cells is a totipotent stem cell.
Give reasons for your answer.

(3)

Cell

Reasons

.....

.....

.....

.....

.....

.....

.....

.....

(b) A fertilised egg can be used as a source of human pluripotent stem cells.

(i) Explain what is meant by the term **pluripotent stem cell**.

(2)

.....

.....

.....

.....

.....

.....



(ii) Describe how a fertilised egg can be used as a source of human pluripotent stem cells.

(3)

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Total for Question 7 = 8 marks)

