Stem Cells

1 Fill in the missing words

…… are cells that have not undergone ……. This means that the cells have not yet become …… and so they are called undifferentiated.

An …… develops from a fertilised egg. All of the cells in an embryo start off identical and undifferentiated. These cells are called …… and can become specialised to form any type of cell. As the embryo grows into a foetus they lose these embryonic stem cells.

However, some stem cells do remain in the body of adults, and these are known as ……. These are only found in certain areas though, such as the ……. Also, unlike embryonic stem cells they can't …… into any cell type, they are restricted to certain types such as blood cells.

[8 marks]

2 How could adult stem cells be used to cure a person who has a disease of faulty blood cells?

……

……

[2 marks]

3 Why could embryonic stem cells potentially cure more diseases than adult stem cells?

……

……

[1 mark]

4 Name a disease that embryonic stem cells could be used to cure

……

……

[1 mark]

5 Give two risks of using stem cells in medicine

1) ……

2) ……

[2 marks]

6 What is the benefit of therapeutic cloning?

……

……

[1 mark]

7 Discuss the ethical concerns with using embryonic stem cells for research and medical treatment

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……

[3 marks]

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8 In plants, stem cells are found in the growing regions. What are these areas called?

……

[1 marks]

9 Give two benefits of producing plants from stem cells

1) ……..

2) ……..……..……

3) ……..

[3 marks]

10 Name three cell types that plant stem cells differentiate into

1) ……..

2) ……..……..……

3) ……..

[3 marks]

[Total - 25 marks]