Dalkeith High School
N5 Biology
Stem cells and Meristems

1. a) Arrange the following structures from the smallest to the largest:

tissue organ system cell

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b) Animal and plant cells are said to be specialised, what does this mean?

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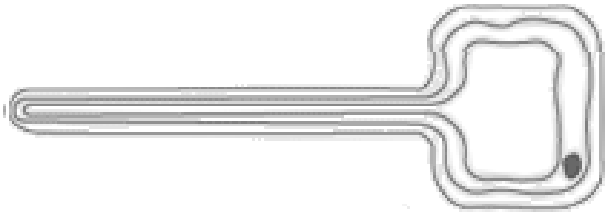
c) Choose one of the cells shown below and explain how its structure is related to its function.

Cell A

Cell B



Cell_____

Explaination_____

_____

1

2. a) What is special about stem cells, compared to other types of cell found in the human body?

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b) Other than repair, name one process which requires stem cells.

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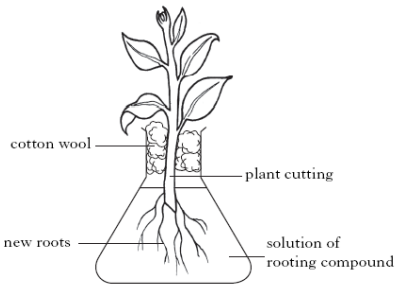
3. Rooting compound encourages roots to grow in cuttings. An experiment was carried out to investigate the relationship between rooting compound concentration and the length of roots in seven cutting taken from a plant. The experiment was set up as shown below.



After 20 days the length of the roots were measured and the results are shown in the table below.

Concentration of rooting compound (mg/l)	Average length of roots (mm)
0	10
1	14
2	32
3	60
4	70
5	50

a) i) Draw a line graph to display the results shown in the table.

3

ii) Using your graph, predict the average length of roots on cuttings grown in a rooting compound concentration of 4.5 mg/l.

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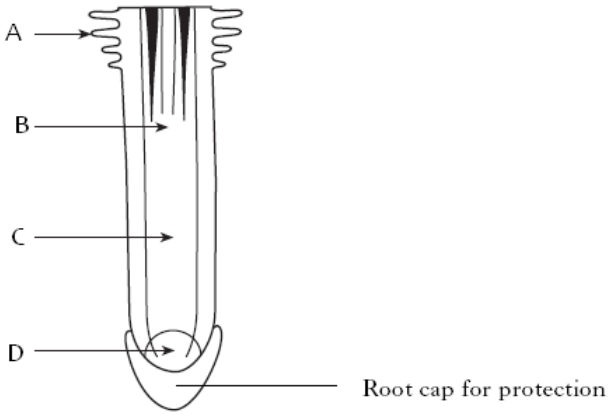
b) The diagram below shows a cross section through a root.



Which letter indicates the meristem?

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1