

Cells, & microscopy

Pages to read – 11-16 both higher and foundation

Knowledge

1. What is the function of the mitochondria?
2. Give three differences between plant and animal cells.
3. Which feature is unique to bacterial cells?
4. Where in a plant are stem cells found?
5. Name the two types of microscope
6. Name two structures that can be seen with an electron microscope that cannot be seen with a light microscope.
7. What is the equation that links image size, magnification and actual size?
8. What is the cell wall in plants made from?
9. What is a 'stem cell'?
10. What two things can be adjusted in order to see cells more clearly on a microscope slide?

Apply

1. What are the two main differences between a eukaryotic cell and a prokaryotic cell?

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2. Describe the main features of each stage of the cell cycle

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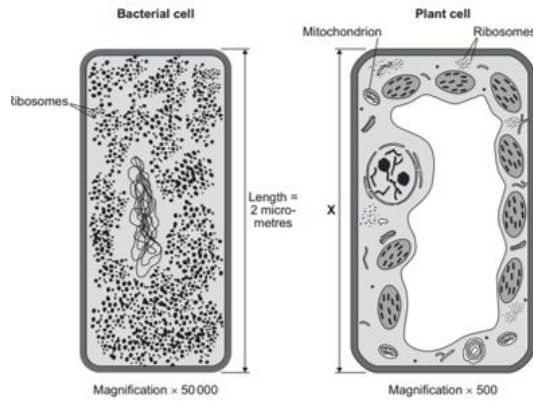
3. What is a 'stem cell'?

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4. Some students measured the size of a cheek cell using an eyepiece graticule. It was 78 mm long and the magnification was x2600. Calculate the actual size of the cell. Give your answer in micrometres.

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5. Below is a picture of two different types of cell



- a) How much bigger is a plant cell than a bacterial cell?  
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 .....
- b) How many orders of magnitude is this?  
 .....
- c) Calculate the real size of the plant cell. Give your answer in micrometres  
 .....  
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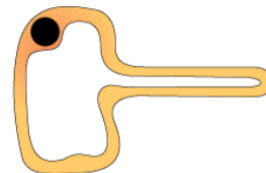
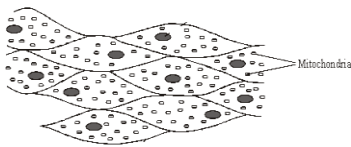
6. Give two uses of stem cells in growing plants

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7. Evaluate the use of stem cells that have been produced by therapeutic cloning to treat paralysis

Advantages	Disadvantages

7. How are the cells below specialised to perform their jobs?



- a) muscle cell .....  
 so that .....
- b) nerve cell.....  
 so that .....
- c) root hair cell .....  
 so that .....