

Marks

Question 20 (4 marks)

Outline how mitosis and cell differentiation assist in the maintenance of health.

4

With the exception of cells such as nerve cells and cardiovascular cells, most cells do not live for the entire life of the organism. In order to maintain a full set of body cells which is required for the maintenance of health, the body uses mitosis to produce genetically identical copies of cells, to replace those which are destroyed, or to make the organism to grow. But in order to effectively carry out metabolic processes in the body, cells must be specialised for particular functions. Cell differentiation allows the cells produced by mitosis to alter the expression of their genetic material, allowing them to become specialised for particular roles in the body.