**c) i) What is mitosis?**

* A type of cell division that occurs during growth leading to increase in number of cells
* all cells maintain the same chromosome constitution i.e. the diploid state

**ii) Describe the five stages of mitosis**

**Interphase**



* replication of organelles
* duplication of DNA
* production of energy (ATP) for cell division

**Prophase**



* stage of dehydration
* chromosomes shorten and thicken
* chromosome replicates into two chromatids
* chromatids joined at centromere
* formation of spindle fibers

**Metaphase**

* chromosomes move to equator (early metaphase)
* chromosomes line up at the equator
* homologous chromosomes do not associate



**Anaphase**

* chromatids separate
* move to opposite ends (poles) of the cell



Telophase



* chromatids reach the poles
* formation of two daughter cells occurs i.e. cytoplasmic division

**ii) State the significance of mitosis**

* ensures each daughter cell has same number and kinds of chromosomes as daughter cells
* gives rise to new cells (responsible for growth)