



1.2 CELL DIVISION

Cell Cycle

DNA replicates

2 sets of chromosomes

Separated to opposite poles of the cell

Produces two genetically identical cells

For growth and repair

Mitosis

Cytoplasm Division

Interphase

Cell grows in size, synthesises new organelles

An unspecialised cell that is capable of differentiating into other cell types and of self-renewal

Can differentiate into any kind of plant cell during the plant's life

Meristem Cells

Plant Cells

Stem Cells

Can differentiate into most types of human cells

Embryonic Stem Cells

Animal Cells

Bone marrow stem cells

Can differentiate into some types of cell e.g. blood cells

Treatment

e.g. diabetes, paralysis

Therapeutic Cloning

Embryo cloned with the same genetic makeup as the patient → no rejection

protection of rare species from extinction

DNA molecules combined with proteins

Humans have 46 chromosomes (23 pairs)

A section of DNA which codes for a protein

Chromosomes

Carry genes

Plant meristem cloning

Enables production of large numbers of disease-resistant plants

AQA

