**17.3 Mitosis**

**Define *mitosis*** - nuclear division giving rise to genetically identical cells

(details of stages are **not** required)

**State the role of mitosis in growth, repair of damaged tissues, replacement of cells and asexual reproduction**

**State that the exact duplication of chromosomes occurs before mitosis**

**State that during mitosis, the copies of chromosomes separate, maintaining the chromosome number**

**Describe stem cells as unspecialised cells that divide by mitosis to produce daughter cells that can become specialised for specific functions**

**17.4 Meiosis**

**Define *meiosis*** - reduction division in which the chromosome number is halved from diploid to haploid resulting in genetically different cells

(details of stages are **not** required)

**State that meiosis is involved in the production of gametes**

Gametes are the result of meiosis, which on fertilization helps to retain the chromosome number specific for a species.



**Explain how meiosis produces variation by forming new combinations of maternal and paternal chromosomes** (specific details are not required)

* Sex cells are formed in the gonads (ovaries and testes) by meiosis;
* The gametes (sex cells) produced are haploid, but they are formed from diploid cells;
* Thus meiosis involves halving the normal chromosome number;
* At the end of the process, cells produced are not all identical, thus meiosis results in variation.