



## Meiosis

1 Where in the body does meiosis take place?

- In the testes in men (or the ovaries in women)

[ 1 mark ]

2 What do we call the cells that meiosis produces? Give 2 examples

- Gametes - Sperm (pollen in plants) and eggs

[ 2 marks ]

3 Describe the stages of meiosis

- The cell duplicates all of its DNA, so that each chromosome now has 2 arms
- The chromosomes arrange in pairs along the centre of the cell
- They are pulled to opposite sides of the cell (poles) by cell fibres
- This distribution is random in terms of whether maternal or paternal chromosomes go to each side
- The cell separates in two
- The chromosomes line up along the centre of each cell again by themselves
- Each chromosome is split in two as one arm is pulled to each side
- The cell splits again forming four unique gametes

[ 6 marks ]

4 How do the cells produced in meiosis differ from those produced by mitosis?

- Meiosis produces haploid gametes that contains 23 chromosomes each and are all unique
- Mitosis results in diploid cells that contain 46 chromosomes that are all the same

[ 2 marks ]

5 Why are sperm cells all genetically unique?

- Because during meiosis different combinations of chromosomes are pulled to each side of the cell

[ 1 mark ]

6 Which hormone stimulates sperm production?

- Testosterone

[ 1 mark ]

[ Total 13 marks ]