WJEC (Eduqas) Biology A-level

Topic 1.6 - Cell Biology

Flashcards

What is the role of mitosis and the cell cycle?

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To produce identical daughter cells for;

- Growth
- Asexual reproduction

State the three stages of the cell cycle.

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- Interphase
- Mitosis
- Cytokinesis

Describe what happens during the ‘interphase’ stage of the cell cycle?

Describe what happens during the ‘interphase’ stage of the cell cycle?

- The cell grows and prepares to divide by:
  - Replicating organelles
  - Condensing chromosomes

What are the 4 stages of mitosis?

What are the 4 stages of mitosis?

- Prophase
- Metaphase
- Anaphase
- Telophase

What happens during the ‘prophase’ stage of mitosis?

What happens during the ‘prophase’ stage of mitosis?

- Spindle fibres appears
- Chromosomes condense

What happens during the ‘metaphase’ stage of mitosis?

What happens during the ‘metaphase’ stage of mitosis?

- Chromosomes align along the equator of the cell

What happens during the ‘anaphase’ stage of mitosis?

What happens during the ‘anaphase’ stage of mitosis?

- Centromeres divide
- Sister chromatids move to opposite poles

What happens during the ‘telophase’ stage of mitosis?

What happens during the ‘telophase’ stage of mitosis?

- Nuclear membrane reforms
- Chromosomes decondense
- Spindle fibres disappear

Describe what happens in the ‘cytokinesis’ stage of the cell cycle.

Describe what happens in the ‘cytokinesis’ stage of the cell cycle.

- Cytoplasm divides
- Production of 2 genetically identical daughter cells

State the main role of meiosis.

State the main role of meiosis.

- Production of haploid gametes that have half the number of chromosomes

How does meiosis produce genetically different cells?

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- Crossing over of chromatids
- Independent assortment of chromosomes

What does crossing over of chromatids mean?

What does crossing over of chromatids mean?

When pairs of chromosomes line up and exchange some of their genetic material.

What does independent assortment of chromosomes mean?

What does independent assortment of chromosomes mean?

When there are various combinations of chromosome arrangement.

State the differences between mitosis and meiosis.

State the differences between mitosis and meiosis.

- Mitosis produces genetically identical cells whereas meiosis doesn't
- Daughter cells in mitosis have the same number of chromosomes as parent cell, while meiosis halves the number
- Mitosis produces 2 daughter cells while meiosis produces 4