Name _____

Chromosome Duplication and Segregation in Mitosis: The Dance of Cell Division

Multiple Choice Questions

1. What is the significance of chromosome duplication in mitosis?

a) It ensures the formation of identical daughter cells.

b) It helps cells gather nutrients.

c) It prepares cells for cytokinesis.

d) It maintains cell growth.

2. What happens during the metaphase stage of mitosis?

a) Chromosomes align along the cell's equator.

b) Chromosomes condense and become visible.

c) Sister chromatids are pulled apart.

d) The nuclear envelope breaks down.

3. Why is chromosome segregation essential in mitosis?

a) It creates genetic diversity.

b) It maintains the diploid state.

c) It ensures that each daughter cell receives an identical set of chromosomes.

d) It reduces the number of chromosomes.

4. During which stage of mitosis do sister chromatids get pulled apart?

a) Prophase

b) Metaphase

c) Anaphase

d) Telophase

5. What is the significance of mitosis in the context of aging and maintenance in organisms?

a) Mitosis helps organisms grow during their early stages.

b) Mitosis preserves genetic diversity.

c) Mitosis replaces old or dying cells throughout an organism's life.

d) Mitosis creates haploid gametes for sexual reproduction.