Q1/ Multiple Choice:

1-Which process primarily involves growth and repair in multicellular organisms?

A) Mitosis

B) Meiosis

C) Cytokinesis

D) Interkinesis

2- In which stage of meiosis does genetic recombination occur?

A) Prophase II

B) Metaphase I

C) Prophase I

D) Anaphase II

3- During which phase of the cell cycle does DNA replication occur?

A) Prophase

B) Interphase

C) Metaphase

D) Telophase

4- Which type of cell division results in daughter cells with half the number of chromosomes of the parent cell?

A) Mitosis

B) Meiosis

C) Cytokinesis

D) Interkinesis

5- In which cell type does mitosis primarily occur?

A) Somatic cells

B) Germ cells

C) Gametes

D) Zygotes

6- Which stage of cell division involves the division of the cytoplasm and the separation of daughter nuclei into separate cells?

A) Prophase

B) Metaphase

C) Cytokinesis

D) Anaphase

7- What are the three parts of a nucleotide?

A) Phosphate group, deoxyribose, adenine

B) Sugar, cytoplasm, histone

C) Phosphate group, sugar, nitrogen base

D) Nucleus, chromosome, centromere

8-Which phase of the cell cycle is characterized by cell growth and DNA replication?

A) Interphase

B) Mitosis

C) Anaphase

D) Telophase

9- What is the main difference between prokaryotic and eukaryotic cell division?

A) Eukaryotic cells have a nucleus, while prokaryotic cells do not.

B) Prokaryotic cells divide by mitosis, while eukaryotic cells divide by binary fission.

C) Eukaryotic cells have membrane-bound organelles, while prokaryotic cells do not.

D) Prokaryotic cells have multiple nuclei, while eukaryotic cells have a single nucleus.

10- What is the purpose of meiosis?

A) Growth and repair of multicellular organisms

B) Production of genetically identical daughter cells

C) Production of gametes for sexual reproduction

D) Maintenance of a constant chromosome number in somatic cells

Q2/ Fill in the Blank:

1- Mitosis results in the production of two daughter cells that are **_genetically_** identical to the parent cell.

2- Meiosis involves two divisions of the cell nucleus, resulting in four daughter nuclei, each with _____ the number of chromosomes of the parent cell.

Answer: half

3- During prophase I of meiosis, homologous chromosomes exchange genetic material, leading to _____ and new combinations of alleles.

Answer: recombination

4- The DNA molecule in the nucleus is packaged into thread-like structures called _____.

Answer: chromosomes

5- Mitosis primarily occurs in _____ cells of multicellular organisms.

Answer: somatic

6- Each chromosome has a constriction point called the _____.

Answer: centromere

7- Meiosis results in the production of daughter cells with _____ the number of chromosomes as the parent cell.

Answer: half

8- The process by which a nucleus gives rise to two daughter nuclei, each morphologically and genetically equivalent to the other, is called _____.

Answer: mitosis

9- The thread-like structures in the nucleus of each cell, made up of DNA tightly coiled around proteins called histones, are called _____.

Answer: chromosomes

10- In eukaryotic cells, cell division consists of two overlapping stages: mitosis and _____.

Answer: cytokinesis