



Practice Worksheet on Cell Biology and Genetics

Generated for Yash Bhatnagar - Based on resource uploaded by user.

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Subject: Biology

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Long Answer Questions

1. Explain the central dogma of molecular biology.
2. Describe cellular respiration and its importance.
3. Explain the process of photosynthesis and its significance.
4. Define natural selection and provide an example.
5. Explain the theory of evolution by natural selection.
6. Describe the process of mitosis and its biological significance.
7. Explain the process of meiosis and its significance in sexual reproduction.

8. Describe DNA replication and its role in cell division.

Multiple Choice Questions

1. Which of the following is the primary energy currency of cells?

- a) A
- b) B
- c) C
- d) D

2. What process converts light energy into chemical energy?

- a) A
- b) B
- c) C
- d) D

3. Which process produces two identical daughter cells?

- a) A
- b) B
- c) C
- d) D

4. What type of cell division results in four haploid gametes?

- a) A
- b) B
- c) C
- d) D

5. Which molecule carries genetic information from DNA to ribosomes?

- a) A
- b) B
- c) C
- d) D

6. What is the mechanism that drives evolution?

- a) A
- b) B
- c) C
- d) D

7. What is the process of making two identical DNA molecules from one?

- a) A
- b) B
- c) C
- d) D

8. What is the name for the process of generating ATP from food?

- a) A
- b) B
- c) C
- d) D

Answer Key

Long Answer Questions - Expected Responses

1. Explain the central dogma of molecular biology.

Expected Answer: The process involves the transfer of genetic information from DNA to RNA, followed by protein synthesis.

2. Describe cellular respiration and its importance.

Expected Answer: It is the controlled release of energy from food substances in cells to generate ATP.

3. Explain the process of photosynthesis and its significance.

Expected Answer: Photosynthesis converts light energy into chemical energy in the form of glucose, utilizing chlorophyll.

4. Define natural selection and provide an example.

Expected Answer: Natural selection favors organisms with traits best suited for survival and reproduction in a particular environment.

5. Explain the theory of evolution by natural selection.

Expected Answer: Evolution is a gradual change in the heritable characteristics of biological populations over successive generations.

6. Describe the process of mitosis and its biological significance.

Expected Answer: Mitosis produces two identical daughter cells from a single parent cell, ensuring genetic continuity.

7. Explain the process of meiosis and its significance in sexual reproduction.

Expected Answer: Meiosis is a reduction division resulting in four genetically diverse haploid gametes crucial for sexual reproduction.

8. Describe DNA replication and its role in cell division.

Expected Answer: DNA replication is the process of producing two identical replicas of DNA from one original DNA molecule.

Multiple Choice Questions – Correct Answers

1. Which of the following is the primary energy currency of cells?

Correct Answer: B

2. What process converts light energy into chemical energy?

Correct Answer: C

3. Which process produces two identical daughter cells?

Correct Answer: A

4. What type of cell division results in four haploid gametes?

Correct Answer: D

5. Which molecule carries genetic information from DNA to ribosomes?

Correct Answer: B

6. What is the mechanism that drives evolution?

Correct Answer: C

7. What is the process of making two identical DNA molecules from one?

Correct Answer: D

8. What is the name for the process of generating ATP from food?

Correct Answer: A