Modes of Reproduction

A. Choose the Correct Answer:

1. Which of the following is a characteristic of asexual reproduction?

- A) It involves two parents
- B) Offspring are genetically identical to the parent
- C) It requires the fusion of male and female gametes
- D) It leads to greater genetic variation

2. Which of these organisms reproduces asexually?

- A) Humans
- B) Frogs
- C) Bacteria
- D) Birds

3. Budding is a type of asexual reproduction commonly observed in:

- A) Amoeba
- B) Hydra
- C) Fish
- D) Frogs

B. Fill in the Blanks:

- 1. Asexual reproduction produces offspring that are ______ to the parent.
- 2. In binary fission, a single cell divides into ______ identical daughter cells.
- 3. ______ is the asexual reproduction method used by yeast, where a small outgrowth develops into a new organism.

C. Case Study:

A scientist, Dr. Mehta, conducted an experiment on different types of reproduction in microorganisms. He observed two groups of bacteria:

- **Group A** reproduced by binary fission, where one cell divided into two identical cells every 20 minutes.
- **Group B** underwent conjugation, where genetic material was exchanged between two bacteria before division.

After 12 hours, Dr. Mehta noticed that Group A had a much larger population than Group B.

Case Study Questions:

- 1. What method of asexual reproduction was observed in Group A?
- 2. Why did Group A's population grow faster than Group B's?
- 3. How does binary fission differ from conjugation in terms of genetic variation?
- 4. What is an advantage and a disadvantage of asexual reproduction?

D. Short Answer Questions:

- 1. What is asexual reproduction?
- 2. Name two advantages and two disadvantages of asexual reproduction.
- 3. How does budding differ from fragmentation?

E. Long Answer Questions:

- 1. Explain different types of asexual reproduction with examples.
- 2. Discuss the advantages and disadvantages of asexual reproduction compared to sexual reproduction.
- 3. Describe how asexual reproduction helps organisms survive in stable environments.