

Name: _____ Date: _____

Prokaryotic Morphology and Pathogenesis Quiz for 12th Grade

Examine microbial classifications and mechanisms beyond simple cell structures, focusing on extremophiles and viral replication cycles.

1. Which of the following describes an organism that thrives in extremely high-temperature environments, such as hydrothermal vents?

- A. Psychrophile
- B. Hyperthermophile
- C. Halophile
- D. Alkaliphile

2. Prions are considered microorganisms because they contain a small amount of DNA surrounded by a protein coat.

- A. True
- B. False

3. The ____ cycle is a viral replication pathway where the viral genome integrates into the host's chromosome as a prophage.

- A. Lytic
- B. Lysogenic
- C. Metabolic
- D. Oxidative

4. Which structure allows certain bacteria to survive harsh conditions like desiccation or radiation by entering a dormant state?

- A. Capsule
- B. Flagellum
- C. Endospore
- D. Pilus

5. Archaea are structurally similar to bacteria but are genetically more closely related to eukaryotes.

- A. True
- B. False

6. Organisms that obtain energy from inorganic chemical compounds rather than sunlight are known as ____.

- A. Photoautotrophs
- B. Chemolithotrophs
- C. Heterotrophs
- D. Saprotrophs

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7. What is the primary distinguishing feature of a retrovirus like HIV?

- A. It contains a double-stranded DNA genome.
- B. It uses reverse transcriptase to create DNA from RNA.
- C. It lacks a protein capsid.
- D. It only infects plant cells.

8. Gram-negative bacteria have a thick layer of peptidoglycan that retains the primary crystal violet stain.

- A. True
- B. False

9. The process by which bacteria exchange genetic material through a bridge-like connection called a pilus is known as ____.

- A. Transformation
- B. Transduction
- C. Conjugation
- D. Binary Fission

10. Which organism is a eukaryotic microbe known for its complex life cycle involving an Anopheles mosquito vector?

- A. Escherichia coli
- B. Plasmodium falciparum
- C. Methanogens
- D. Tobacco Mosaic Virus