**Bacteria** (p. 441 – 450)

**I. Bacterial Structure**

**1. Circle the correct characteristics of bacteria (*versus eukaryotes*).**

Nucleus : Present Not present

Cell Size : 1μ - 5μ 10μ - 100μ

Multicellularity : Multicellular Single-celled

Chromosomes : Single, circular DNA Linear, multiple pieces of DNA

Reproduction : Binary Fission Mitosis

Flagella : Single, spinning fiber Whipping, complex microtubules

Metabolism : Limited Diverse

**2. Identify the three basic shapes of bacteria.**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - rod-shaped

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - sphere-shaped

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - spiral-shaped

**3. What does each of the following pre-fixes mean?**

Strepto (or Pneumo) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Staphylo = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. Why is Gram staining important in medicine?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5. Define the term endospores.**

Endospores –

**6. What occurs in the process of binary fission?** *(p. 119)*

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**7. What occurs during conjugation?**

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**II. Obtaining Energy**

**1. Differentiate between anaerobic and aerobic bacteria.**

Anaerobic Bacteria : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Aerobic Bacteria : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Match the types of bacteria energy styles with the correct definitions.** *(Not in the book.)*

1. \_\_\_\_\_\_\_\_ Photoautotroph A. Photosynthetic and capable of “eating”.

2. \_\_\_\_\_\_\_\_ Chemoautotroph B. “Eats” organic molecules & breaks them down.

3. \_\_\_\_\_\_\_\_ Heterotroph C. Obtains energy directly from organic molecules.

4. \_\_\_\_\_\_\_\_ Photoheterotroph D. Carries out photosynthesis similar to plants.

**3. List the four main types of photosynthetic bacteria.**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. What kind of relationship does *Rhizobium* have with plants?**

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**III. Pathogenic Bacteria**

**1. What does each strain of bacteria cause?**

1. *Propionibacterium acnes* : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. *Staphylococcus aureus* : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. *Clostridium botulinum* : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. *Escherichia coli* : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Define the term toxins.**

Toxins –

**3. What is the intent of biowarfare?**

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**IV. Antibiotics**

**1. Define the term antibiotics.**

Antibiotics –

**2. Who discovered the antibiotic, penicillin, in 1928?**

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**3. Over time, resistant strains of bacteria can evolve.**

Circle One : True False

**V. Importance Of Bacteria**

**1. List six types of foods produced using bacteria.**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_