

## Chapter 26 Pre-Class Quiz

1. \_\_\_\_\_ is a type of horizontal gene transfer during which genetic information is transferred from one bacterium to another via virus.
  - a. **Transduction**
  - b. Transformation
  - c. Transference
  - d. Conjugation
  - e. Conduction
2. Which of the following is not a characteristic that differentiates Bacteria from Archaea?
  - a. Ester linkages in membrane lipids.
  - b. **Capable of chemoautotrophy**
  - c. Ability to metabolize methane
  - d. Histones incorporated into chromosomes
3. Prior to the advent of DNA sequencing technology and its application to the study of bacterial diversity and phylogeny, traditional taxonomic methods succeeded in characterizing thousands of bacterial species. As mentioned in the text, the cultured species represented less than 1% of the total number of bacterial species in nature.

True or False: Phylogenies can be generated from molecular sequence data derived from single genes or from entire genomes.

  - a. **True**
  - b. False
4. Consider the metabolic repertoire of prokaryotes and the diverse environments in which they can thrive to answer the following question.

True or False: Respiration is strictly an aerobic process.

  - a. True
  - b. **False**
5. Consider the metabolic repertoire of prokaryotes and diverse environments in which they can thrive to answer the following question.

True or False: Phototrophs use light as the energy source for biosynthesis whereas chemotrophs oxidize either organic or inorganic compounds.

  - a. **True**
  - b. False
6. Archaea have been shown to inhabit which of the following environments? (Select all correct choices.)
  - a. **Environments with pH of 1 or below**
  - b. **Environments with a temperature of 100 degrees Celsius**
  - c. **Environments with a high salinity**
  - d. **Environments with a low oxygen concentration**
7. \_\_\_\_\_ effectively limits how large a bacterium can grow. The bigger the bacterial cell, the less likely that nutrients can reach the cell's interior.
  - a. Conjugation
  - b. Differentiation
  - c. Transduction
  - d. **Diffusion**

8. We typically think of bacteria as inhabiting human intestines. In (or on) what other locations of healthy human body would you expect to find bacteria? (Select all Correct Choices).
- a. In the mouth
  - b. In the skin
  - c. On the nose
  - d. On the hair
9. Archaea and bacteria are involved in which of the following cycles? (Select all correct choices.)
- a. The Nitrogen Cycle
  - b. The Carbon Cycle
  - c. The Sulfur Cycle
10. Examine the phylogenetic tree depicted in Figure 26.17 as you address the following question. True or False: The distribution of anaerobic hyperthermophiles suggests the common ancestor to all Archaea thrived in hot environments that lacked oxygen.
- a. True
  - b. False