**Bacteria and Viruses Study Guide**

* To be filled out while viewing the lecture and read the assigned text.

**Bacteria**

1. What is the scientific name for the group that includes single-celled organisms that lack a nucleus? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What does it mean to not have a nucleus or organelles? What aspect of bacteria allows the lack of compartmentalization that is found in eukaryotic cells?
3. What is the name of the structure that allows bacteria to stick to surfaces? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (by the way, this is how plaque on your teeth stay onto your teeth rather than be washed away when you drink a beverage).
4. Describe the shape of the following forms of bacteria:

* Coccus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Bacillus:  Rod shaped (like a hotdog)
* Spirillum: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are other ways to identify or describe bacteria aside from shape?.
2. What is the name of the stage/structure that allows for dormancy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Bacteria that use CO2 for their carbon source, but use inorganic substances instead of light are termed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Speculate on the environments these type of organisms are likely to be found in.
4. In your own words explain how bacteria replicate themselves and what role conjugation plays in the genetic diversity of a bacteria species.
5. Most bacteria are harmless or benefit us by releasing  \_\_\_\_\_\_\_\_\_\_\_\_, fixing \_\_\_\_\_\_\_\_\_\_\_, or cycling \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. Not all bacteria are bad, in fact most are not disease causing at all.  List three ways that bacteria provide beneficial services for the support of ecosystems.
7. There are various ways to describe the incidence of disease that occur.  Identify what is meant by each of the following categories and provide a relevant example.
   1. Sporadic diseases:
   2. Epidemic diseases:
   3. Endemic diseases:
   4. Pandemic diseases:
8. What is the role of the CDC?
9. List several examples of disease causing bacteria.

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1. Who are the Archaeans?  Explain their significance in relation to eukaryotes.
2. Are the Archaeans pathogenic?
3. There are numerous ways to describe the Archaeans, identify what is meant by each of the following terms:
4. Methanogens:
5. Halophilic:
6. Thermophilic:

**Viruses**

1. List the characteristics that are required to be considered a living organism.:
2. Is a virus larger or smaller than the smallest known cell?  Circle one
3. Are viruses alive?  Explain why or why not.
4. What are the two primary components a virus?
5. List the six steps involved in viral replication.
6. Give several examples of viral infections
7. Can viruses typically be treated/killed after the initial infection?
8. How can viral infections be prevented?
9. What are viroids?  Can you give an example?
10. What are prions?  Can you give an example?
11. Can humans get prions? Give an example and explain how this can occur.

**Key Terms:**

pathogen

prokaryotic

coccus

bacillus

spirillum

cell wall

flagella

pili

photoautotroph

chemoautotroph

photoheterotroph

chemoheterotroph

bacterial chromosome

prokaryotic fission

strain

Archaeans

methanogens

extreme halophiles

extreme thermophile

infection

disease

epidemic

pandemic

virus

viroid

prion