

Thought Questions for BIO 139—Week #1

Helpful Hints for TQs: Each week you will be given questions to guide you in your study of General Microbiology. My suggestion would be 1) Look at your notes from your readings and class; 2) try to answer the thought questions without looking at your notes; 3) Go back and use your notes and the book to help answer the questions; 4) If you are still having problems, please come see me during office hours or Message me! My office hours are M/W: 4:30-5:30 PM. Lastly, since there are anywhere from two large to 4 small essay questions on the exam, it is important to write the answers out in complete sentences.

Readings from the Book: Ch. 1 Sections I & II; and Ch. 12 Section I and 12.4.

Why study Microbiology?

1. What is microbiology?
2. What are some properties of microbial cells and how are these properties helpful in our study of higher organisms?
3. How does microbiology affect humans? Can you name at least three examples?
4. What is the difference between applied and basic science? Can you name some examples of applied disciplines that come out of microbiology? Some basic disciplines?

Microbiology and Historical Perspectives:

1. Who was the first to look at microorganisms under the compound light microscope? Where was he from and what types of microorganisms did he observe?
2. Who was the first to see bacteria? Where was he from and how was he able to see bacteria? What did this individual call bacteria?
3. What is the theory of spontaneous generation? Who disproved this theory? Where was he from and how did he disprove this theory? What other major advances in microbiology are attributed to this individual?
4. Explain Koch's postulates. What assumptions are made when using Koch's postulates? What else is Koch known for?

Microbial Diversity, Evolution and Origins:

1. What are the three branches on the Tree of Life? How were these branches determined and by whom?
2. State the endosymbiosis theory. What is the name of the scientist who developed this theory? What evidence is there to support this theory?
3. When did the Earth form? What organisms are responsible for changing the earth from anoxic to oxic environments?
4. How long ago did bacteria and archaea diverge? When did eukaryotes appear?
5. How many bacterial phyla exist? How many archaeal phyla exist?
6. BE ABLE TO COMPARE AND CONTRAST EUKARYOTIC AND BACTERIAL CELLS!