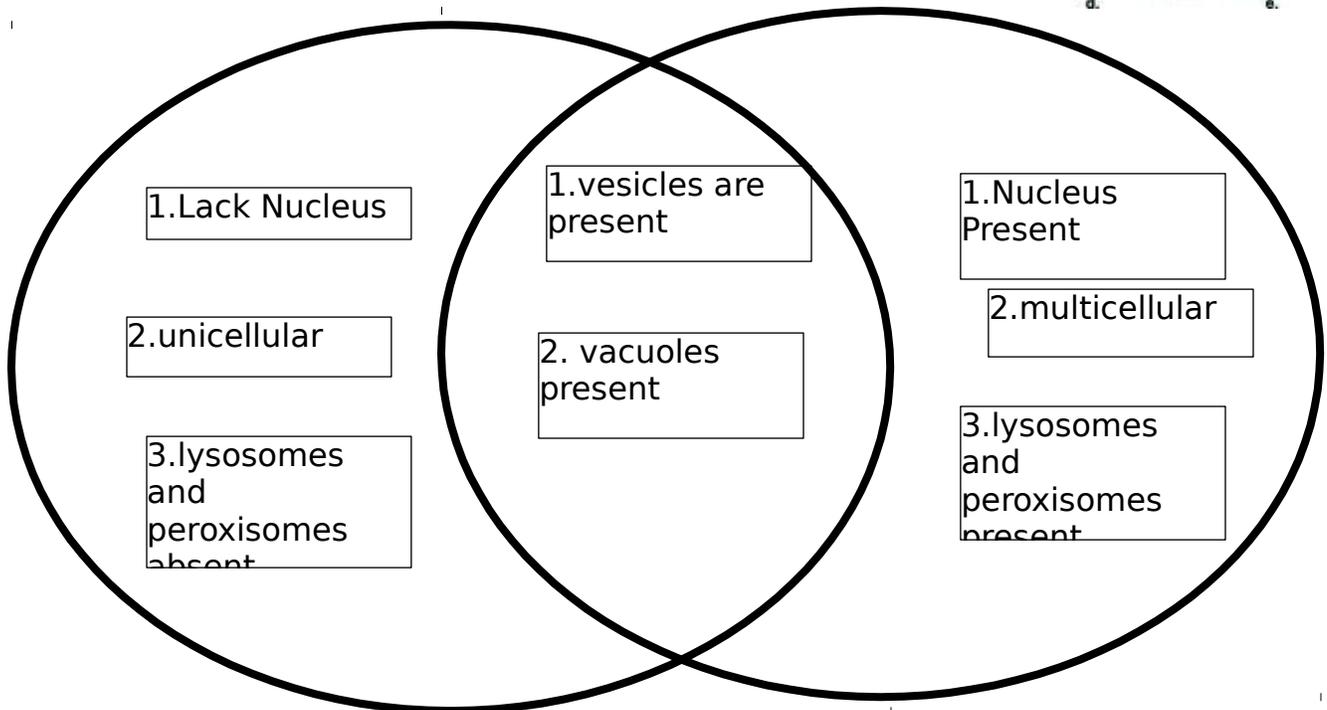
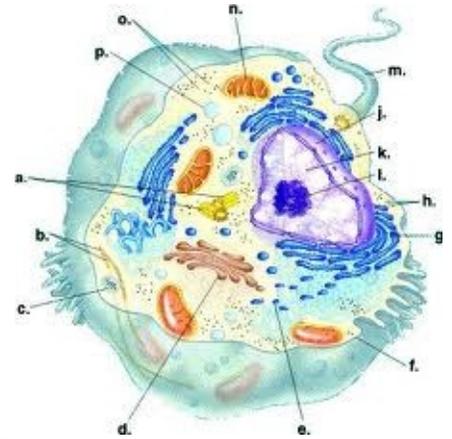
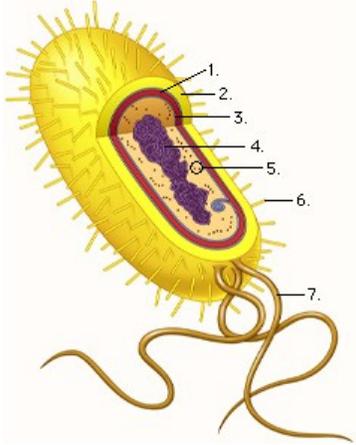


# ZO 211 Quiz 1

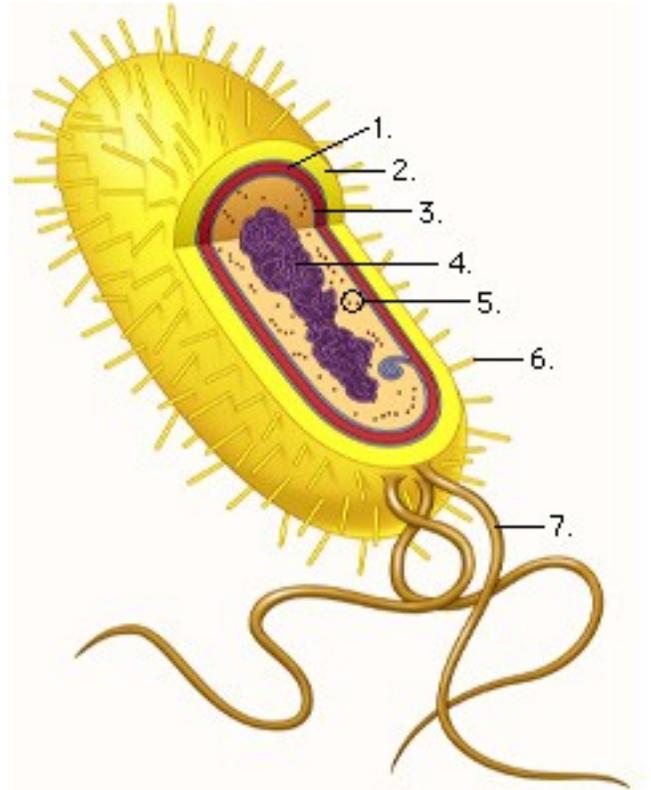
Name: Jennifer Wyman

Date: 01/03/2019



1. List 3 characteristics that are only present in prokaryotes, 3 characteristics that are only present in Eukaryotes, and two characteristics that are common to both prokaryotes and eukaryotes (8pts).

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2. List the names of the numbered structures (7pts).

1. cell wall

2. glycocalyx

3. cell membrane

4. bacterial chromosome or nucleoid

5. ribosomes

6. fimbriae

7. flagellum

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3. Identify the functions of each of the identified structures. (8pts)	
Flagella	Specialized appendage attached to the cell by a basal body that holds a long, rotating filament. The movement pushes the cell forward and provides motility
Pili	An appendage used for drawing another bacterium close in order to transfer DNA to it
Nucleoid	Composed of condensed DNA molecules. DNA directs all genetics and heredity of the cell and codes for all proteins
Capsule	This layer of polysaccharide protects the bacterial cell and is often associated with pathogenic bacteria because it serves as a barrier against phagocytosis by white blood cells.
Cell wall	A semirigid casing that provides structural support and shape for the cell
Plasma membrane	This is a lipid bilayer much like the cytoplasmic membrane of other cells. There are numerous proteins moving within or upon this layer that are primarily responsible for transport of ions, nutrients and wastes across the membrane.
Ribosomes	Tiny particles composed of protein and RNA that are the sites of protein synthesis
DNA	Instructions for the development and functions of living things

4. As the staff biologist for the public health department, you examine the pond water (case file) under the microscope and notice high levels of green algae. What do you tell the members of the community about the safety of their water? What other information do you need? (5pts).

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I would let the members of the community know that there are high levels of green algae in pond which could be from a few different things. One could be over use of fertilization on the home landscapes and another could be from an unknown cause in the pond itself. The community members can be informed that they should could try a few different things such as introducing animals that are safe for the people but eat the algae to keep the growth under control. The same with introducing certain types of plants. Further testing would need to be done in order to determine the exact cause such as the types of fertilizers that are being used and how long they have noticed the growth. After the testing is complete, they would be informed of the most likely, so that they can know the safety of the water. Other things could be suggested such as placing something in the pond such as a pump to help circulate the water to reduce the algae.

5. What is the purpose of using immersion oil with the 100X objective? (3pts)

The purpose of using immersion oil with the 100x objective is to take away the air space that is between the slide and the objective so that it does not refract the light making it easier to see through the microscope at the high of an objective.

6. You are examining a prepared slide with the 40X objective in place over the microscope. You rotate the 100X objective over the slide. When you look into the eyepiece, your specimen is gone! What happened? (3pts),

The field of vision is much smaller in the higher objective then it was at 40X so the specimen is now out of focus and needs to be adjusted one way or the other, using the fine course adjustments as it was just in focus under another power to bring it back in focus and to ensure that it is under the light source to maintain the best possible view.

7. What is the difference between magnification and resolution? (3pts)

Magnification is the ability to make small objects seem larger, as we do with microscopes. The microscope makes the image appear larger with the magnifications so that small organism can be view and studied. Resolution is the ability to distinguish two objects that are very close together.

8. Jane was very careful in performing her Petri dish inoculation. When she examined her plate during the next lab period, a fuzzy white colony was growing on her plate, but not along her inoculation streak. What happened? Where did this colony come from? (5pts)

Jane did not properly sterilize her inoculating instrument between streaking and contaminated her culture. Jane may not have had enough of the sample for the colony to show up along her inoculation streak causing no growth to show. However, there was enough at the place were the instrument touched the dish at some point containing the sample causing the streak to grow were it now is.

9. You performed the Gram stain in lab on a sample containing bacteria that are known to be Gram positive and Gram negative. When you look at the slide you created under the microscope, all of the cells appear deep purple. What could have gone wrong? (5pts)

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The stain crystal violet could have been left on the sample too long. It is important to make sure you rinse the slides are directed to insure a proper view. This could also happen if the heat treatment was not done correctly.

10. What would you observe if you decolorized your slide too much? How would your cells appear? (3pts)

If you decolorized, you slide too much you would observe all the cells appearing pink in color. There would be little distinction between gram-positive and gram-negative cells.