2.1

Name the components of the endomembrane system and **describe** how they work together to export materials from the cell.

2.2

Describe how the inner membranes of the chloroplast and mitochondria have such a large surface area and **explain** why this selected for over time (why is it beneficial)?

2.3

Explain why cells are small and use a math example to support your position.

2.4

Draw a model of the fluid mosaic membrane include and label as many components as possible. **Label** the functions of each component.

2.5

Explain the role of any and all membranes. **Discuss** the characteristics of molecules that can and can not pass freely through the membrane and provide an example of each. **Discuss** how the those that do not move freely exit from the cell or enter the cell should a cell need to transport them.

2.6

Compare passive and active transport.

2.7

Compare facilitated diffusion to active transport.

2.8

Discuss the result of raising temperatures on the rate of osmosis. You must the solute potential and water potential equations to defend your answer.

2.9

Explain the role of any and all membranes.
Explain why cells require continual membrane transport.

2.10

Discuss compartmentalization in cells, why it is important and how cells evolved over time as a result of it.

2.11

Discuss the differences in the origins of membrane bound organelles such as endoplasmic reticulum and the mitochondria. **Discuss** how bacteria in the past and how the bacteria today produce ATP without mitochondria?