Internet Assignment:

Endosymbiont Theory

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_

Go to the website below and answer the following questions

<http://highered.mcgraw-hill.com/sites/9834092339/student_view0/chapter4/animation_-_endosymbiosis.html>

1. From lecture, what are the advantages of having highly folded membranes
2. Where do scientists hypothesize the endoplasmic reticulum and nuclear envelop may have evolved from?
3. What evidence do we have that supports this hypothesis?
4. A critical stage in the evolution of eukaryotic cells was likely what?
5. What is an endosymbiont
6. How do photosynthetic bacteria derive energy from sunlight
7. List the evidence for the endosymbiotic hypothesis
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now go to the website below and watch the narrated animation

<http://www.sumanasinc.com/webcontent/animations/content/organelles.html>

1. What are the 2 organelles that have features in common with whole cells?
2. What are these features, and how do they compare to that of eukaryotic cells?
3. What is the name of the scientist that formulated the hypothesis about the endosymbiont theory
4. What type of ancient prokaryote gave rise to each organelle
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. How long ago is it thought this endosymbiosis occurred?
6. The primitive eukaryote, according to the theory, ingested but did not \_\_**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**\_ another prokaryote
7. What is the most efficient means of extracting energy from organic compounds?
8. In this process, what is used and what is formed?
   1. Used: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Formed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Can the prokaryote and eukaryote live independently any more?
10. In the case chloroplasts, what type of bacterium was likely ingested?
11. Critical Thinking: In question # 6 we mention a “primitive eukaryote”. Based on what you learned in the 1st animation, explain why we are calling this a primitive eukaryote and not a prokaryote.

***Click intro and take the quiz!***