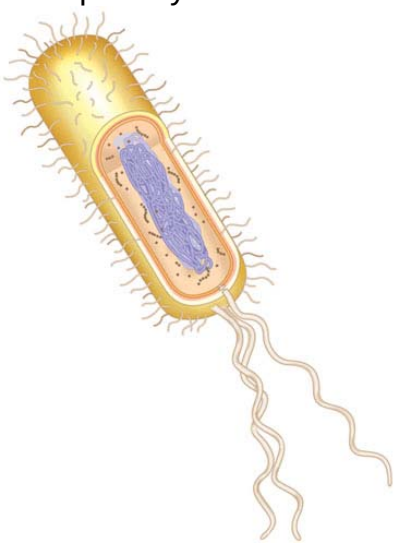
MCC Biology **Name** _____
Chapter 6 Guided Reading Assignment

1. What is resolving power and why is it important in biology?

2. How does an electron microscope work and what is the difference between a scanning and transmission electron microscope?

3. Describe the process and purpose of cell fractionation.

4. Label the prokaryotic cell below – list structure and function.



(a)

(b)

5. Why is surface area to volume such an important concept as it applies to the size of a cell?

6. For each of the structures below – note the specific structure and the function of the organelle or part of the organelle. The important concept is to note how the

specific structure allows for the specific function to be accomplished.

a. Nucleus
    i. Nuclear envelope
    ii. Nuclear lamina
    iii. Chromosomes
    iv. Chromatin
    v. Nucleolus
b. Ribosomes
c. Endoplasmic reticulum
    i. Smooth ER
    ii. Rough ER
d. Golgi Apparatus
e. Lysosomes
f. Vacuoles

i. Food

ii. Contractile

iii. Central w/tonoplast

g. Endomembrane system – overall

h. Mitochondria

i. Mitochondrial matrix

ii. Cristae

i. Plastids

i. Amyloplast

ii. Chromoplast

iii. Chloroplast

1. thylakoids

2. stroma

j. peroxisomes

k. cytoskeleton – pay careful attention to the details in this section

i. microtubules

1. centrosomes and centrioles

2. cilia and flagella – include basal body

3. dynein walking

ii. microfilaments

1. actin

2. myosin

3. pseudopodia

4. cytoplasmic streaming

iii. intermediate filaments

l. Cell walls

i. Primary cell wall

ii. Middle lamella

iii. Secondary cell wall

m. Extracellular matrix

i. Collagen

ii. Proteoglycans

iii. Fibronectin

iv. Integrins

n. What are intercellular junctions and why are they important?

o. Contrast plasmodesmata, tight junctions, desmosomes, and gap junctions.