

Name _____

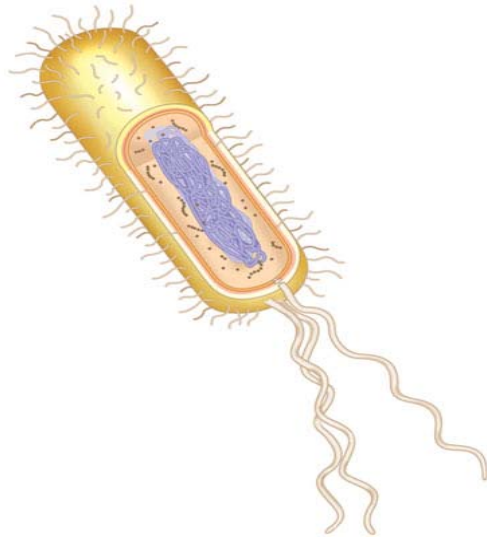
AP Biology

TEXT: *Biology*, Campbell and Reece

7th Edition

Chapter 6 – The Chemical Context of Life
Guided Reading

1. What is resolving power and why is it important in biology?
2. Briefly describe the function of an electron microscope 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 the structure and function of each item labeled.



(a)



(b)

5. Why is surface area to volume such an important concept in biology 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. *This exercises objective is to note how the specific structure allows for the specific function to be accomplished by the organelle or part of the organelle.*
- a. Nucleus
1. nuclear envelope
 2. nuclear lamina
 3. chromosomes
 4. chromatin
 5. nucleolus
- b. Ribosome
- c. Endoplasmic reticulum

1. smooth ER
 2. rough ER
- d. Golgi Apparatus
- e. Lysosomes
- f. Vacuoles
1. contractile
 2. central w/tonoplast
- g. Endomembrane system – *Overall*
- h. Mitochondria
1. mitochondrial matrix
 2. cristae
- i. Plastids
1. amyloplast
 2. chromoplast

3. chloroplast

a. thylakoids

b. stroma

j. Peroxisomes

1. glyoxysomes

k. Cytoskeleton – *Please pay careful attention to the details in this section.*

1. Microtubules

a. centrosomes and centrioles

b. cilia and flagella – *include basal body*

c. dynein “walking”

2. Microfilaments

a. actin

b. myosin

c. pseudopodia

d. cytoplasmic streaming

l. Intermediate filaments

m. Cell walls

1. primary cell wall

2. middle lamella

3. secondary cell wall

n. Extracellular matrix

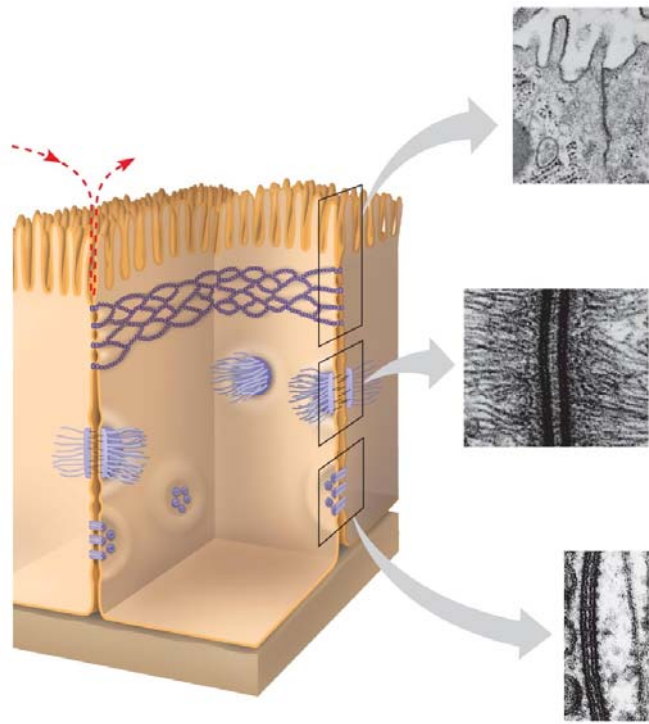
1. collagen

2. proteoglycans

3. fibronectin

4. integrins

7. Compare and contrast plasmodesmata, tight junctions, desmosomes, and gap junctions featured in the diagram below. *Please label the diagram.*



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