

Name _____

AP Biology

TEXT: *Biology*, Campbell and Reece

7th Edition

Chapter 6

**Cell Biology – Part I and II
Thematic Review Guides**

Part I

1. The tool that led to the understanding that cells are the basic unit of life was the...

2. The smallest structures visible with the light microscope are:

3. What is the advantage of the electron microscope?

4. How do biologists isolate cell components?

5. What are four things all cells have in common?

a. _____

b. _____

c. _____

d. _____

6. How do prokaryotic and eukaryotic cells differ?

7. What is a limiting factor to cell size?

8. How do ribosomes differ in prokaryotic and eukaryotic cells?

9. Why is that difference important to us?

10. What is the adaptive value of the endomembrane system? _____

11. For each of the cellular structures, indicate a few significant aspects. Include major functions and structures.

Nuclear membrane

Nuclear pores

Nuclear lamina

Chromatin

Nucleolus

Ribosome

Smooth ER

Rough ER

Golgi apparatus

Lysosome

Vacuole

Mitochondria

Chloroplast

Peroxisome

Cytoskeleton

Microtubule

Microfilament

Intermediate filament

Extracellular matrix

Plasmodesmata

Tight junction

Desmosomes

Gap junctions

12. Trace the path of production of a protein-based secretion from a secretory cell. (List the organelles involved).

Part II

Explain how the following organelles work together to perform the life functions of the cell.

1. nucleus and ribosomes

2. endoplasmic reticulum and golgi bodies

3. endoplasmic reticulum and ribosomes

4. golgi bodies and lysosomes

5. nucleus and endoplasmic reticulum

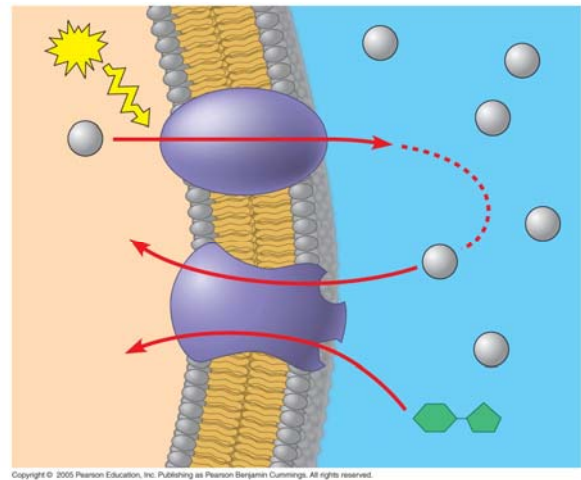
6. endoplasmic reticulum , golgi bodies and vesicles

7. endoplasmic reticulum and cell membrane

AP BIOLOGY EXAM CHECKPOINT

8. This figure illustrates the process of

- (a) cotransport
- (b) passive diffusion
- (c) receptor-mediated endocytosis
- (d) phagocytosis
- (e) pinocytosis



Directions: Questions 9-13 below consist of five lettered choices followed by a list of numbered phrases or sentences. For each numbered phrase or sentence, select the one choice that is most closely related to it.

- (A) Peroxisomes
- (B) Golgi apparatus
- (C) Lysosomes
- (D) Endoplasmic reticulum
- (E) Mitochondria

9. An organelle that is characterized by extensive, folded membranes and is often associated with ribosomes

10. An organelle with a cis and trans face, which act as the packaging and secreting center of the cell

11. The sites of cellular respiration

12. Single-membrane structures in the cell that perform many metabolic functions and produce hydrogen peroxide

13. Large membrane-bound structures that contain hydrolytic enzymes and that are found predominantly in animal cells