Unit 1: Cells Review Assignment

Name:

Microscopes

Vocabulary	
coarse focus knob	magnification power
compound light microscope	objective lenses
electron micrograph	resolving power
eyepiece	reversed
fine focus knob	right side up
light source	upside down

Use the terms in the vocabulary box to fill in the blanks. Use each term only once. You will not need to use all the terms.

1. The _____ is the microscope usually used in science classes and medical laboratories.

2. The _____ is used for viewing and contains a lens that magnifies.

3. The _____ brings an object into focus at low or medium power.

4. The _____ brings an object into focus at high power.

5. The _____ have different magnification power to magnify the object.

6. The _____ supplies the light needed to view the slide.

7. The ability to distinguish between objects that are very close together is called _____.

8. When you look through a microscope, you will observe an image that is magnified, _____, and _____.

9. A(n) _____ is a picture taken by a camera hooked up to an electron microscope.

Use with textbook pages 8–21.

Observing living things

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.

Term	Descriptor
1. _____ compound light microscope	**A.** power of the objective lens multiplied by the power of the eyepiece
2. _____ objective lenses	**B.** has two sets of lenses
3. _____ eyepiece	**C.** used for viewing and magnifying the image
4. _____ stage	**D.** ability to distinguish between two objects that are very close to each other
5. _____ arm	**E.** supports the eyepiece
6. _____ total magnification	**F.** have different magnification powers to magnify the object
7. _____ resolving power	**G.** supports the slide

Circle the letter of the best answer.

8. Which of the following is not a characteristic of living things?

A. needs energy

B. hunts for food

C. grows

D. reproduces

9. What is the difference between a unicellular and a multicellular organism?

A. size of cells

B. structure of cells

C. shape of cells

D. number of cells

10. Which of the following is not a use of a microscope?

A. magnifies distant objects

B. magnifies objects that are close together

C. magnifies unicellular organisms

D. magnifies cells

11. Which of the following best describes an electron micrograph?

A. a type of electron microscope

B. a camera hooked up to an electron microscope

C. a picture shown on a screen hooked up to an electron microscope

D. a scanning electron microscope

12. If the objective lens is 40× and the eyepiece lens is 10×, what is the total magnification?

A. 400×

B. 40×

C. 10×

D. 4×

Omit

13. If the objective lens is 10× and the eyepiece lens is 10×, what is the total magnification?

A. 10×

B. 100×

C. 1000×

D. 20×

Omit

Use with textbook pages 24–29.

Inside a cell

Vocabulary	
bacteria	living thing
cell theory	mitochondria
cell membrane	organelle
cell wall	prokaryotic
chloroplasts	nucleus
cytoplasm	vacuoles
eukaryotic	viruses

Use the terms in the vocabulary box to fill in the blanks. Each term may be used only once. You will not need to use all the terms.

1. A(n) _____ is a cell structure in which functions are carried out to ensure the cell's survival.

2. Each cell is surrounded by a _____ that separates the interior of the cell from its surroundings.

3. Within the cell is a jelly-like substance called _____.

4. The _____ is the organelle that controls all the activities within the cell.

5. The _____ are the energy producers in the cell.

6. _____ are temporary storage compartments that sometimes store waste.

7. The _____ is a tough, rigid structure that surrounds the cell membrane and protects the cell.

8. The _____ trap the energy from the Sun and change it into chemical energy.

9. Plant and animal cells are examples of _____ cells.

10. _____ cells are cells that do not have organelles with membranes around them.

11. _____ are examples of prokaryotic cells that can cause disease.

12. _____ are examples of non-living things that are able to reproduce.

Use with textbook pages 22–39.

Cells

Circle the letter of the best answer.

1. Cell membranes are found in
   - **A.** plant cells only
   - **B.** animal cells only
   - **C.** neither plant or animal cells
   - **D.** both plant and animal cells

2. Which comparison between plant and animal cells is correct?

	Plants	Animals
A.	no chloroplasts	chloroplasts
B.	no mitochondria	mitochondria
C.	nucleus	no nucleus
D.	cell wall	no cell wall

3. Which of the following describes the cell theory?

I.	The cell is the basic unit of life.
II.	All organisms are composed of one or more cells.
III.	Two or more cells are necessary to produce new cells.
IV.	All cells come from other living cells.

   - **A.** I, II, and III only
   - **B.** I, II, and IV only
   - **C.** I, III, and IV only
   - **D.** II, III, and IV only

4. Which of the following statements is true?
   - **A.** A eukaryotic cell has organelles surrounded by membranes.
   - **B.** A prokaryotic cell has organelles surrounded by membranes.
   - **C.** All eukaryotic cells are surrounded by a cell wall.
   - **D.** All prokaryotic cells are surrounded by a cell wall.

5. Bacteria are examples of
   - **A.** organelles
   - **B.** viruses
   - **C.** prokaryotic cells
   - **D.** eukaryotic cells

6. Plant cells are examples of
   - **A.** organelles
   - **B.** bacteria
   - **C.** prokaryotic cells
   - **D.** eukaryotic cells

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.

Term	Descriptor
7. _____ cell membrane	**A.** produces energy
8. _____ nucleus	**B.** controls all the cell's activities
9. _____ cytoplasm	**C.** protects and supports plant cells
10. _____ mitochondria	**D.** traps light energy
11. _____ vacuoles	**E.** stores materials such as wastes
12. _____ cell wall	**F.** controls what enters and leaves a cell
13. _____ chloroplasts	**G.** organelles without a membrane around them
	H. holds the organelles in place

Cellular Respiration and Photosynthesis

1. Which of the following shows the products of photosynthesis?
    a. Oxygen and glucose
    b. Oxygen and carbon dioxide
    c. Water and carbon dioxide
    d. Glucose and water

2. Where does photosynthesis occur?
    a. Cell membrane
    b. Nucleus
    c. Mitochondrion
    d. Chloroplast

3. What "fuel" is used during cellular respiration?
    a. Water and Oxygen
    b. Glucose and Water
    c. Oxygen and Glucose
    d. ATP

4. Animals and Plants work together by constantly cycling:
    a. Energy
    b. Oxygen
    c. Sugar
    d. ATP

5. What is one of the products for cellular respiration?
    a. Oxygen
    b. Carbon Dioxide
    c. Glucose
    d. Chlorophyll

6. If you were to collect the gas given off by a plant in bright sunlight, which gas would be collected?
    a. Carbon Dioxide
    b. Oxygen
    c. ATP
    d. Water

7. Word List:
    - Mitochondrion
    - ATP
    - Glucose
    - Oxygen
    - Carbon Dioxide
    - Chloroplast
    - Water