

**Name:****Score:** 0 / 17 points (0%) [5 open-ended questions not graded]**Chapter 1 Self-Quiz****Part A Modified True/False**

Indicate whether the sentence or statement is true or false. If false, change the identified word or phrase to make the sentence or statement true.



1. Both animal cells and plant cells contain vacuoles. \_\_\_\_\_

**RESPONSE:****ANSWER:** T**POINTS:** 0 / 1

2. The low concentration of oxygen in the cells causes diffusion of oxygen out of the cells.  
\_\_\_\_\_

**RESPONSE:****ANSWER:** F,into**POINTS:** 0 / 1

3. Diffusion is the movement of substances from an area of high concentration to an area of low concentration. \_\_\_\_\_

**RESPONSE:****ANSWER:** T**POINTS:** 0 / 1

4. Osmosis is the movement of water across a membrane from an area of high concentration to an area of low concentration. \_\_\_\_\_

**RESPONSE:****ANSWER:** T**POINTS:** 0 / 1**Part B Completion**

Complete each sentence or statement.



5. A structure that carries materials through the cytoplasm is called  
\_\_\_\_\_.

**RESPONSE:****ANSWER:** endoplasmic reticulum**POINTS:** 0 / 1

6. The \_\_\_\_\_ power magnification is best for scanning objects under the microscope.

**RESPONSE:**

**ANSWER:** low *or*  
lowest

**POINTS:** 0 / 1



7. Many of the chemical activities in the cell take place in the \_\_\_\_\_.

**RESPONSE:**

**ANSWER:** cytoplasm

**POINTS:** 0 / 1



8. Ribosomes are the sites of \_\_\_\_\_ production.

**RESPONSE:**

**ANSWER:** protein

**POINTS:** 0 / 1

### Part C Multiple Choice

*Identify the letter of the choice that best completes the statement or answers the question.*



9. Animals get their energy by
- |                           |                   |
|---------------------------|-------------------|
| a. producing it           | c. photosynthesis |
| b. eating other organisms | d. dividing       |

**ANSWER:** B

**POINTS:** 0 / 1



10. Which of the following is part of the cell theory?
- |                         |                                      |
|-------------------------|--------------------------------------|
| a. All cells reproduce. | c. All cells get rid of waste.       |
| b. All cells breathe.   | d. All cells arise from other cells. |

**ANSWER:** D

**POINTS:** 0 / 1



11. What do eukaryotic cells contain?
- |                  |               |
|------------------|---------------|
| a. cell membrane | c. chromosome |
| b. vacuole       | d. nucleus    |

**ANSWER:** D

**POINTS:** 0 / 1



12. An example of a prokaryotic cell is
- |                   |             |
|-------------------|-------------|
| a. a plant cell   | c. bacteria |
| b. an animal cell | d. any cell |

**ANSWER:** C

**POINTS:** 0 / 1

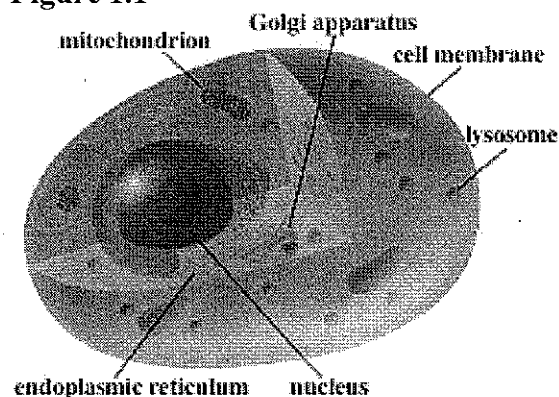


13. Which microscope produces digital three-dimensional images?
- |                                     |                                 |
|-------------------------------------|---------------------------------|
| a. light microscope                 | c. scanning electron microscope |
| b. transmission electron microscope | d. single lens microscope       |

**ANSWER:** C

**POINTS:** 0 / 1

Figure 1.1



- ⓧ \_\_\_\_ 14. In Figure 1.1, which structure produces proteins?
- |                    |                  |
|--------------------|------------------|
| a. ribosomes       | c. nucleus       |
| b. Golgi apparatus | d. mitochondrion |

ANSWER: A

POINTS: 0 / 1

- ⓧ \_\_\_\_ 15. In Figure 1.1, which structure supplies the cell's energy?
- |                    |                  |
|--------------------|------------------|
| a. ribosomes       | c. nucleus       |
| b. Golgi apparatus | d. mitochondrion |

ANSWER: D

POINTS: 0 / 1

- ⓧ \_\_\_\_ 16. The movement of water through a selectively permeable membrane is called
- |              |            |
|--------------|------------|
| a. diffusion | c. mitosis |
| b. osmosis   | d. meiosis |

ANSWER: B

POINTS: 0 / 1

- ⓧ \_\_\_\_ 17. Which of the following is used to focus the beam of electrons in a transmission electron microscope?
- |                           |            |
|---------------------------|------------|
| a. fine adjustment knob   | c. magnets |
| b. coarse adjustment knob | d. ocular  |

ANSWER: C

POINTS: 0 / 1

**Part D Short Answer***Use sentences to answer the following questions.*

- ⓧ \_\_\_\_ 18. Identify the characteristics of living things for each of the following examples:
- Plant roots grow downwards.
  - Human kidneys produce urine.
  - Geese lay eggs that hatch into goslings.
  - The lifespan of humans is around 80 years.
  - We eat everyday.

**RESPONSE:**

- ANSWER:** a. Living things respond to the environment.  
b. Living things produce waste.  
c. Living things reproduce, grow and repair themselves.  
d. Living things die.  
e. Living things require energy.

**POINTS:** -- / 1



19. What is the total magnification of a microscope with an eyepiece with 15X magnification and an ocular of 40X?

**RESPONSE:**

**ANSWER:**  $15 \times 40 = 600X$

**POINTS:** -- / 1



20. List the main differences between plant and animal cells.

**RESPONSE:**

**ANSWER:** Plant cells have chloroplasts, animals cells do not.  
Plant cells have cell walls, animals cells do not.  
Some animal cells have structures that allow them to move, plants cells do not.

**POINTS:** -- / 1



21. What are the main advantages and disadvantages of a transmitting electron microscope and a scanning electron microscope?

**RESPONSE:**

**ANSWER:** The transmitting electron microscope takes images of the internal structures of specimens. A disadvantage is that the specimen must be dead. The scanning electron microscope can produce three-dimensional images of the surface of specimens that can be living but cannot produce images of any of the internal structures.

**POINTS:** -- / 1



22. Explain how osmosis and turgor pressure are related.

**RESPONSE:**

**ANSWER:** If the concentration of water outside a plant cell is higher than the concentration of water inside then water will enter the cell by osmosis. The vacuole and cytoplasm will fill and swell and push against the cell wall. This is turgor pressure.

**POINTS:** -- / 1

Name:

Score: 0 / 14 points (0%) [5 open-ended questions not graded]

## Chapter 2 Self Quiz

## Part A Modified True/False

Indicate whether the sentence or statement is true or false. If false, change the identified word or phrase to make the sentence or statement true.



1. An organ is a group of cells.

RESPONSE:

ANSWER: F, tissues

POINTS: 0 / 1



2. Unicellular organisms are called micro-organisms.

RESPONSE:

ANSWER: T

POINTS: 0 / 1



3. Paramecium is a unicellular protist that can make its own food.

RESPONSE:

ANSWER: F, cannot

POINTS: 0 / 1



4. Cells divide when they get too big.

RESPONSE:

ANSWER: T

POINTS: 0 / 1

## Part B Matching

Match the following organisms/structures with the statements below.

a. bacteria

c. protists

b. fungi

d. viruses



- \_\_\_ 5. athlete's foot is caused by this

ANSWER: B

POINTS: 0 / 1



- \_\_\_ 6. only active when inside a living cell

ANSWER: D

POINTS: 0 / 1



- \_\_\_ 7. responsible for food spoilage

**ANSWER: A****POINTS: 0 / 1**

- ☒ \_\_\_\_ 8. one type can cause malaria

**ANSWER: C****POINTS: 0 / 1****Part C Multiple Choice**

*Identify the letter of the choice that best completes the statement or answers the question.*

- ☒ \_\_\_\_ 9. A substance produced by skin cells that blocks sunlight is
- |            |             |
|------------|-------------|
| a. melanin | c. ribosome |
| b. insulin | d. lysosome |

**ANSWER: A****POINTS: 0 / 1**

- ☒ \_\_\_\_ 10. Red blood cells are made of
- |          |               |
|----------|---------------|
| a. mucus | c. hemoglobin |
| b. pus   | d. antibodies |

**ANSWER: C****POINTS: 0 / 1**

- ☒ \_\_\_\_ 11. Most of the cytoplasm of which of the following cells is occupied by vacuoles.
- |                |                 |
|----------------|-----------------|
| a. blood cells | c. nerve cells  |
| b. fat cells   | d. muscle cells |

**ANSWER: B****POINTS: 0 / 1**

- ☒ \_\_\_\_ 12. Which of the following body systems is responsible for destroying invaders?
- |                       |                       |
|-----------------------|-----------------------|
| a. respiratory system | c. excretory system   |
| b. immune system      | d. circulatory system |

**ANSWER: B****POINTS: 0 / 1**

- ☒ \_\_\_\_ 13. Which type of cells engulf disease organisms?
- |                      |                     |
|----------------------|---------------------|
| a. white blood cells | c. nerve cells      |
| b. red blood cells   | d. epithelial cells |

**ANSWER: A****POINTS: 0 / 1**

- ☒ \_\_\_\_ 14. Plant cells with thin walls are found in
- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| a. leaves, flowers, fruits, and roots | c. flowers, trunks, and branches      |
| b. leaves and trunks                  | d. seeds, leaves, flowers, and trunks |

**ANSWER: A****POINTS: 0 / 1**

**Part D Short Answer**

Use sentences to answer the following questions.



15. Explain how tissues, organs and organ systems are related.

**RESPONSE:**

**ANSWER:** Tissues are composed of similar cells doing the same function. Organs are made of several different tissues that work together to do a function. Organ systems are made of several organs that work together to do a specific function.

**POINTS:** -- / 1



16. How is the function of a plant cell determined by the thickness of the cell wall?

**RESPONSE:**

**ANSWER:** Thin cell walls are more flexible and are used for storage. Thick cell walls are more rigid and are used for support.

**POINTS:** -- / 1



17. How is the function of nerve tissue related to its structure?

**RESPONSE:**

**ANSWER:** Nerve tissue is made of bundles of nerve cells that are long and thin. Bundles are coated with a fatty material that speeds up nerve impulses.

**POINTS:** -- / 1



18. Explain the steps of infection by a virus in a host cell.

**RESPONSE:**

**ANSWER:** The virus attaches to the cell and injects its genetic material into the cell. The viral genetic material enters the host nucleus causing the nucleus to produce virus parts, protein coats and viral genetic material. The new viruses are assembled in the host cell. The cell bursts and releases the new viruses.

**POINTS:** -- / 1



19. Which organelle helps to destroy pathogens? Describe the process.

**RESPONSE:**

**ANSWER:** Lysosomes release special chemicals that destroy both invaders and white blood cells.

**POINTS:** -- / 1

Name:

Score: 0 / 15 points (0%) [5 open-ended questions not graded]

**Chapter 3 Self-Quiz****Part A Completion***Complete each sentence or statement.*

1. The \_\_\_\_\_ is a flap of tissue that prevents food from entering the trachea.

**RESPONSE:****ANSWER:** epiglottis**POINTS:** 0 / 1

2. Most of the chemical digestion of food occurs in the first part of the \_\_\_\_\_.

**RESPONSE:****ANSWER:** small intestines**POINTS:** 0 / 1

3. Vessels that return blood to the heart are called \_\_\_\_\_.

**RESPONSE:****ANSWER:** veins**POINTS:** 0 / 1

4. The waste product of cell processes that is removed from the blood in the lungs is \_\_\_\_\_.

**RESPONSE:****ANSWER:** carbon dioxide**POINTS:** 0 / 1**Part B Matching***Match the following terms with the correct description.*

- |               |           |
|---------------|-----------|
| a. pathogens  | d. toxins |
| b. antigens   | e. pus    |
| c. antibodies |           |



5. made of dead white cells and microbes

**ANSWER:** E**POINTS:** 0 / 1

6. causes the immune response to begin

**ANSWER:** B**POINTS:** 0 / 1



☒ \_\_\_\_ 7. any disease-causing organism

**ANSWER: A**

**POINTS: 0 / 1**

☒ \_\_\_\_ 8. produced by some micro-organisms

**ANSWER: D**

**POINTS: 0 / 1**

☒ \_\_\_\_ 9. produced by white blood cells

**ANSWER: C**

**POINTS: 0 / 1**

### Part C Multiple Choice

*Identify the letter of the choice that best completes the statement or answers the question.*

☒ \_\_\_\_ 10. Which muscles contract when you inhale?

a. rib muscles

b. diaphragm

c. both of the above

d. none of the above

**ANSWER: C**

**POINTS: 0 / 1**

☒ \_\_\_\_ 11. The process of getting rid of metabolic wastes in the body is called

a. excretion

b. digestion

c. circulation

d. endocrine

**ANSWER: A**

**POINTS: 0 / 1**

☒ \_\_\_\_ 12. Nephrons are located in the

a. kidney

b. urethra

c. ureter

d. bladder

**ANSWER: A**

**POINTS: 0 / 1**

☒ \_\_\_\_ 13. Chemicals that speed up the process of digestion are called

a. hormones

b. enzymes

c. antibodies

d. antigens

**ANSWER: B**

**POINTS: 0 / 1**

☒ \_\_\_\_ 14. Which system provides oxygen to and removes carbon dioxide from the body?

a. digestive system


b. circulatory system

c. endocrine system

d. respiratory system

**ANSWER: D**

**POINTS: 0 / 1**


-  15. Disease causing organisms are called
- a. antigens
  - b. pathogens
  - c. antibodies
  - d. toxins

**ANSWER: B**

**POINTS: 0 / 1**

#### Part D Short Answer


*Use sentences to answer the following questions.*

-  16. Describe the parts of the lungs where gas exchange occurs. How are they structured to do their jobs?

**RESPONSE:**

**ANSWER:** Gases in the lungs are exchanged in many tiny air sacs (alveoli). There are so many and this increases the surface area for diffusion to take place. There are tiny blood vessels or capillaries surrounding each air sac, so the oxygen goes into the blood right away. The alveoli have a moist lining, so dissolved gases can diffuse.


**POINTS: -- / 1**

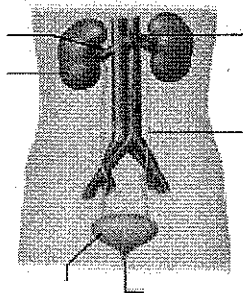
-  17. Why is your heart called a double pump?

**RESPONSE:**

**ANSWER:** The heart is composed of two separate halves that pump together. The right side pumps blood to the lungs for oxygen and to get rid of carbon dioxide. The left side pumps blood throughout the body.

**POINTS: -- / 1**


-  18. Label the following diagram of the excretory system.



**RESPONSE:**

**ANSWER:** clockwise: artery; ureter; urethra; bladder; kidney, vein

**POINTS: -- / 1**

-  19. Describe the roles of diffusion and osmosis in the circulatory and excretory systems.

**RESPONSE:**

**ANSWER:** In the lungs, oxygen diffuses into the blood and carbon dioxide diffuses out of the blood. Nutrients diffuse into the blood from the digestive system. In the kidneys, wastes diffuse out of the blood. Water moves by osmosis into and out of the blood in the kidneys.

**POINTS:** -- / 1



20. Compare the body's natural immune response to the immunity produced by a vaccination.

**RESPONSE:**

**ANSWER:** The body's natural immune response occurs when a pathogen enters the body and the body produces antibodies that disable the pathogen. A vaccination contains part of the pathogen, which stimulates the production of antibodies that will disable the real pathogen if it enters the body.

**POINTS:** -- / 1

Name: Key

Score: 0 / 28 points (0%) [7 open-ended questions not graded]

## Unit A Self Quiz

### Part A Modified True/False

Indicate whether the sentence or statement is true or false. If false, change the identified word or phrase to make the sentence or statement true.



1. All living cells are identical.

RESPONSE:

ANSWER: F, similar

POINTS: 0 / 1



2. Cell membranes are impermeable.

RESPONSE:

ANSWER: F, selectively permeable

POINTS: 0 / 1



3. Yeast is a multicellular organism.

RESPONSE:

ANSWER: F, unicellular

POINTS: 0 / 1



4. Fungi can be both multicellular and unicellular.

RESPONSE:

ANSWER: T

POINTS: 0 / 1



5. The circulatory system is responsible for absorbing oxygen from the air.

RESPONSE:

ANSWER: F, respiratory

POINTS: 0 / 1



6. Arteries carry blood away from the heart.

RESPONSE:

ANSWER: T

POINTS: 0 / 1



7. Sensory neurons carry messages from the brain to muscle tissue.

RESPONSE:

ANSWER: F, Motor

POINTS: 0 / 1

**Part B Completion***Complete each sentence or statement.*

8. The cell membrane contains protein \_\_\_\_\_ that allow certain materials to pass through.

**RESPONSE:****ANSWER:** pores**POINTS:** 0 / 1

9. Selective breeding is a form of \_\_\_\_\_ engineering.

**RESPONSE:****ANSWER:** genetic**POINTS:** 0 / 1

10. An immune response to a foreign antigen is the result of the production of \_\_\_\_\_.

**RESPONSE:****ANSWER:** antibodies**POINTS:** 0 / 1

11. Nerves that carry electrical impulses away from the brain are called \_\_\_\_\_ neurons.

**RESPONSE:****ANSWER:** motor**POINTS:** 0 / 1**Part C Matching**

*Match the following structures with the correct role or characteristic. You can use each more than once.*

a. artery

c. capillary

b. vein

d. valve



- \_\_\_\_ 12. blood cells travel in single file

**ANSWER:** C**POINTS:** 0 / 1

- \_\_\_\_ 13. carries blood away from the heart

**ANSWER:** A**POINTS:** 0 / 1

- \_\_\_\_ 14. prevents blood from going the wrong way

**ANSWER:** D**POINTS:** 0 / 1

- \_\_\_\_ 15. carries blood under pressure

**ANSWER: A****POINTS: 0 / 1**

- ☒ \_\_\_\_ 16. carries low pressure blood

**ANSWER: C****POINTS: 0 / 1**

- ☒ \_\_\_\_ 17. oxygen leaves the blood from this

**ANSWER: C****POINTS: 0 / 1**

- ☒ \_\_\_\_ 18. only works in one direction

**ANSWER: D****POINTS: 0 / 1**

- ☒ \_\_\_\_ 19. returns blood to the heart

**ANSWER: B****POINTS: 0 / 1****Part D Multiple Choice**

*Identify the letter of the choice that best completes the statement or answers the question.*

- ☒ \_\_\_\_ 20. An example of a eukaryotic cell is
- |                   |                 |
|-------------------|-----------------|
| a. a plant cell   | c. bacteria     |
| b. an animal cell | d. both a and b |

**ANSWER: D****POINTS: 0 / 1**

- ☒ \_\_\_\_ 21. The maximum limit of magnification with a light microscope is approximately
- |           |               |
|-----------|---------------|
| a. 200X   | c. 20 000X    |
| b. 2 000X | d. 2 000 000X |


**ANSWER: B****POINTS: 0 / 1**

- ☒ \_\_\_\_ 22. A dialysis machine works like a model of the human
- |           |             |
|-----------|-------------|
| a. kidney | c. stomach  |
| b. lungs  | d. pancreas |

**ANSWER: A****POINTS: 0 / 1**


- ☒ \_\_\_\_ 23. What type of tissue is mostly found in the brain?
- |               |           |
|---------------|-----------|
| a. epithelial | c. muscle |
| b. nerve      | d. fat    |

**ANSWER: B****POINTS: 0 / 1**

-  \_\_\_\_ 24. Which body system is responsible for coordination and regulation of body activities?
- a. circulatory system
  - b. digestive system
  - c. excretory system
  - d. endocrine system


**ANSWER: D**

**POINTS: 0 / 1**

-  \_\_\_\_ 25. Cells that produce antibodies are found in
- a. blood tissue
  - b. fat tissue
  - c. nerve tissue
  - d. muscle tissue


**ANSWER: A**

**POINTS: 0 / 1**

-  \_\_\_\_ 26. The function of the air sacs in the lungs is to
- a. increase the volume of air
  - b. increase the surface area for diffusion
  - c. increase the surface area for osmosis
  - d. increase the size of the lungs


**ANSWER: B**

**POINTS: 0 / 1**

-  \_\_\_\_ 27. The excretory system has a second function which is to
- a. control body temperature
  - b. regulate body water
  - c. remove solid waste
  - d. break down fats

**ANSWER: B**


**POINTS: 0 / 1**

-  \_\_\_\_ 28. Water is reabsorbed from the digestive material in the
- a. small intestine
  - b. large intestine
  - c. liver
  - d. pancreas

**ANSWER: B**

**POINTS: 0 / 1**


### Part E Short Answer

-  29. What are the two ideas in the cell theory?

**RESPONSE:**

**ANSWER:** All living things are composed of one or more cells.  
All new cells arise only from cells that already exist.

**POINTS: -- / 1**

-  30. A cell with 5% salt in the cytoplasm is placed in a container with 3% salt solution. Describe what will happen to the cell.

**RESPONSE:**

**ANSWER:** The cell has a lower concentration of water than the salt solution so water will move by osmosis from the container into the cell. The cell will swell up.

**POINTS: -- / 1**



31. List the organization of the human body from smallest to largest.

**RESPONSE:**

**ANSWER:** cells, tissues, organs, organ systems

**POINTS:** -- / 1



32. How does cell size determine the need for cell division?

**RESPONSE:**

**ANSWER:** As cells get larger, the surface area to volume ratio decreases. There is not enough surface area to feed the volume and it takes longer for nutrients to reach the nucleus. This triggers cell division.

**POINTS:** -- / 1



33. Where do antibodies come from and what function do they have?

**RESPONSE:**

**ANSWER:** Antibodies are produced by white blood cells. They have special shapes that attach to the markers on pathogens and deactivate them.

**POINTS:** -- / 1



34. Explain how blood pressure helps the kidney get waste out of the blood.

**RESPONSE:**

**ANSWER:** In the kidney there are capsules of tiny blood vessels and the blood pressure is high. This causes the dissolved waste in the blood to be pushed across a membrane into tubules that leave the kidney.

**POINTS:** -- / 1



35. List the parts of the body's first line of defence against foreign bodies and give the functions.

**RESPONSE:**

**ANSWER:** skin - produces natural oils and sweat which prevent micro-organisms from growing

hair in nostrils - filter out particles

ears - produce wax to trap foreign particles

eyes - produce tears that kill bacteria

mouth, nose, throat - produce mucous that traps particles

**POINTS:** -- / 1