|  |  |
| --- | --- |
| 7th Grade Integrated Science |  |
| Unit 4 & 5 Review Quiz A |  |

**Directions: Answer these questions to the best of your ability; clearly circle your answer.**

1. A scientist was observing a group of cells. Each cell contained a nucleus, mitochondria, chloroplasts, cytoplasm, and a cell membrane. Based on this information, which answer choice below correctly characterizes the cells he is observing? **3b**
	1. Eukaryotic cells
	2. Prokaryotic cells
	3. Bacterial cells
	4. Animal cells
2. In multicellular organisms, what is the correct organization of cells from simplest to most complex? **3b**
	1. Tissue 🡪 Cell 🡪 Organ 🡪 Organ System
	2. Cell 🡪 Tissue 🡪 Organ 🡪 Organ System
	3. Cell 🡪 Organ 🡪 Organ System 🡪 Tissue
	4. Organ System 🡪 Organ 🡪 Cell 🡪 Tissue
3. Cougars are frequently found in the upper east portion of Siberia. These mammals have a brain, spinal cord, and many nerves that work together to send messages around the body. Which level of organization does this represent? **3b**
	1. Organ
	2. Cell
	3. Tissue
	4. Organ System
4. Which of the following statements describes the function of the cell membrane? **3b**
	1. Separates the nucleus from the cytoplasm.
	2. Controls which substances enter and leave the cell.
	3. Moves substances and organelles around inside the cell.
	4. Traps the energy from sunlight to produce sugar.
5. Which of the following matches a cell organelle with its function? **3b**
	1. Chloroplast – movement
	2. Nucleus – cell regulation
	3. Vacuole – energy production
	4. Mitochondrion – photosynthesis
6. A scientist is using a very high-powered microscope to learn about the function of ribosomes in a cell. Which of the following statements describes what the scientist would see? **3e**
	1. Water being stored in a large sac-like structure.
	2. Materials being stored and transported between cell organelles.
	3. Light energy being captured and converted into food.
	4. Proteins being synthesized based on the directions in DNA.
7. Which of the following organelles is found in animal cells? **3e**
	1. Cell Wall
	2. Chloroplast
	3. Ribosome
	4. Vacuole
8. Quinnisha was cleaning her teacher’s supply closet and organizing the microscope slides by placing them into two boxes: one for animal cells, and the other for plant cells. When looking at one of the slides, she noticed the cell had a nucleus, cytoplasm, a chloroplast, and a cell membrane. Which of those four characteristics told Quinnisha it was a plant cell? **3b**
	1. Nucleus
	2. Cytoplasm
	3. Chloroplast
	4. Cell membrane
9. Which of the following statements best describes photosynthesis assuming sunlight is present? **3e**
	1. Carbon dioxide and water are turned into sugar and oxygen.
	2. Sugar and oxygen are turned into water and carbon dioxide.
	3. Oxygen and carbon dioxide are turned into water and sugar.
	4. Water and sugar are turned into oxygen and carbon dioxide.
10. What is the correct equation for aerobic cellular respiration? **3e**
	1. O2 + C6H12O6 🡪CO2 + H2O + ATP
	2. O2 + C6H12O6 + ATP 🡪CO2 + 6H2O
	3. CO2 + H2O 🡪O2 + C6H12O6 + ATP
	4. CO2 + H2O + ATP 🡪O2 + C6H12O6
11. Which of the following statements is true about how oxygen is used in photosynthesis and cellular respiration? **3e**
	1. Photosynthesis releases oxygen and cellular respiration uses up oxygen.
	2. Photosynthesis uses up oxygen and cellular respiration releases oxygen.
	3. Both photosynthesis and cellular respiration use up oxygen.
	4. Both photosynthesis and cellular respiration release oxygen.
12. Isaac notices on Monday a piece of the science class starfish is cut off and sitting in the side of the tank. On Thursday he sees that the piece has become a tiny starfish and is crawling around What kind of reproduction can Isaac infer the starfish use? **3e**
	1. Through sexual reproduction
	2. Through asexual reproduction
	3. Through hybrid pollination
	4. Through cross-fertilization
13. When gametes are produced from a parent somatic cell during normal meiosis, which of the following describes the number of chromosomes in each resulting cell? **3e**
	1. Each resulting cell has the same number of chromosomes as the parent cell.
	2. Each resulting cell has twice the number of chromosomes as the parent cell.
	3. Each resulting cell has one-half the number of chromosomes as the parent cell.
	4. Each resulting cell has one-fourth the number of chromosomes as the parent cell.
14. A cut on a frog’s foot will repair itself using which of the following processes? **3e**
	1. Mitosis.
	2. Photosynthesis
	3. Meiosis
	4. Respiration
15. Asexual reproduction results in which of the following?
	1. Offspring with less genetic material.
	2. Offspring with more genetic material.
	3. Offspring with a combination of DNA from their parent.
	4. Offspring with identical DNA to their parent.
16. The diagram at the right shows the phase of mitosis when the centrioles are at opposite poles of the cell and the chromosomes are lined up halfway between the centrioles.

Which diagram shows the **NEXT** step of mitosis?

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| A. | B. | C. | D. |

1. Use the diagram to the below to answer the following question.



Which phase of mitosis is occurring in Letter C? **3e**

1. Anaphase
2. Prophase
3. Metaphase
4. Telophase
5. How many chromosomes will be in the gametes of an organism that has 12 chromosomes in its somatic cells? **3e**
	1. 3
	2. 6
	3. 4
	4. 24
6. In which of the following ways does perspiring help the body to maintain homeostasis? **3e**
	1. By decreasing body temperature
	2. By increasing blood sugar levels
	3. By increasing the amount of fluid in the body
	4. By reducing the amount or carbon dioxide in cells
7. Which of the following examples illustrates sexual reproduction? **3e**
	1. A single bacterium performs binary fission, dividing itself into two new bacteria.
	2. A parent hydra plant produces a hydra offspring with identical DNA through a process called budding.
	3. A lion sperm cell fertilizes a female lion’s egg cell to form a single zygote.
	4. A freshwater sponge releases a mass of cells with identical DNA, which will develop into adult cells.