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**Cells Test Study Guide**

**Directions: Pick *25* questions to answer.**

1. What do all cells have in common? *All cells have cytoplasm.*
2. The smallest form of life and the most basic unit of all living organisms is the *cell.*
3. State the three most important parts of the cell theory.
* *Cells are the basic unit of all living organisms.*
* *All cells come from pre-existing cells.*
* *All organisms (living things) are made up of one or more cells.*
1. What is next in this series? Cells -> Tissues -> Organs -> ? *Organ Systems*
2. A cell membrane is described as selectively permeable. What does this mean?
	1. Will not allow any materials in or out of the cell
	2. Will only allow water in or out of the cell
	3. *Will allow some materials in or out of the cell but will not allow other materials*
	4. Will allow all materials in or out of the cell
3. It is important for materials to be able to move around the inside of a cell. Which organelle acts as a transportation system for these materials? *Endoplasmic Reticulum*
4. E. coli is a dangerous bacteria that is one-celled and doesn’t have a nucleus. What kind of organism is E. coli? *Prokaryotic*
5. Which scientists contributed the most to the invention of the compound microscope? *Zacharias Janssen*
6. Complete the analogy: Salem MS is to a cell as lockers are to *Vacuoles*
7. A plant’s green color and its ability to make its own food by converting sunlight into energy are due to the presence of which organelle? *Chloroplasts*
8. Which organelle is responsible for directing all of the activities of the cell? *Nucleus*
9. This organelle is a lot like a post office because it packages proteins and gets them ready to be delivered to other parts of the cell. *Golgi Body or Golgi Apparatus*
10. Which organelle is most likely to assist in secretion or getting rid of materials? *Lysosome*
11. What material helps keeps the organelles in place inside of the cell? *Cytoplasm*
12. In order to find food and move from one location to another, the euglena uses a tail-like structure called a *flagellum.*
13. Which part of a cell determines the traits and ‘writes the laws’ of the cell? *Chromatin*
14. Which process allows water to move from soil into the roots of plants? *Osmosis*
15. Which of the following is true about bacteria?
	1. They all cause disease
	2. They cannot be treated by antibiotics
	3. They are multi-celled
	4. *They are prokaryotic*
16. The following cells come from a human being. Why don’t they look alike?



*The job of a cell determines is shape and size. Since there are many different types of cells in the human body with different jobs, they will appear differently.*

1. Cells need energy in order to do their jobs. Which organelle is responsible for breaking down glucose (sugar) to release energy for the cell? *Mitochondria*
2. Besides water, other materials such as salt, wastes, and oxygen need to move through the cell membrane. What process allows materials to move across the membrane? *Diffusion*
3. Food cannot pass through the cell membrane until it has been completely broken down into a usable form. What is the usable form of food needed for energy?
	1. Protein
	2. Lipids
	3. Cellulose
	4. *Glucose*
4. Homeostasis is the body’s ability to maintain a steady, regular body environment. What **two** things does the body do to get the temperature back to normal in the cells if they get too hot or too cold? *Too hot: sweat / Too cold: shiver*
5. What are protists?
	* *Single-celled organisms*
	* *Found in liquid water*
	* *Neither plant, animal, or fungus*
	* *Many different types exist*
6. **The picture below illustrates what process?

*Since the material is going from low concentration to high concentration, it needs energy which is active transport.*

1. Which of the following is true about viruses?
2. *They are neither living nor dead*
3. They are larger than human cells
4. They don’t have genetic material
5. They can reproduce on their own
6. List the type of structure each of the following use for movement.

*Cilia* *Flagella* *Pseudopod* *Colony*



**The graph below shows the before and after measurement for the mass of an egg placed in syrup.**

**Mass of egg (g)**

80

40

0

0 12 24

**Time in syrup (hr)**

 Time (h)

1. The change in the mass of the egg is most likely caused by the loss of water which is called
2. infusion
3. diffusion
4. *osmosis*
5. The egg gives up water because the cell membrane chooses to let it out. This is due to the fact that cell membranes are
6. transparent
7. co-transport
8. *selectively permeable*
9. If this graph were to continue for the next 24 hours (for a total of 48 hours), what would you predict to happen?
10. The mass will continue to decrease until all the water leaves the egg.
11. The mass will start to go up again because the egg will begin taking in the syrup.
12. *The line will level off (plateau) because equilibrium will be reached.*