Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Study Guide: Cell Parts and Unicellular Organisms**

1. Liz is examining a plant cell under a microscope. She sees many small green organelles inside the cell. Her teacher explains that the process of photosynthesis takes place inside these organelles. What organelles is Liz looking at?
2. What type of organism is composed of one or more cells that carry out functions to sustain life?
3. **Which of the following structures would normally be found in a plant cell but not in an animal cell?**
   1. Cell wall b. Cell membrane c. Mitochondrion d. Nucleus
4. **Fill in the blanks with the answer that correctly completes the sentence. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can only obtain food through consuming other organisms.**
   1. Paramecia and volvox b. Euglena and amoeba

c. Volvox and euglena d. Amoeba and paramecia

1. Single-celled organisms may move using: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_.
2. A protisit that uses a flagellum to move is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. What do the rod-like green structures within the Euglena allow the organism to do?
4. Some single-celled organisms are more similar to plants than to animals because they can \_\_\_\_\_\_\_\_\_\_\_.
5. During science class, a group of students went on a field trip to a nearby pond where they collected samples of pond water and pond plants. The students used a microscope to study cells in their samples. They also took sample of their own cheek cells and studied them using the microscope. The results are shown in the following table.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Nucleus** | **Cell Membrane** | **Cell Wall** | **Cytoplasm** | **Chloroplast** | **Vacuole** |
| cheek cells | X | X |  | X |  | X |
| pond plant cells | X | X | X | X | X | X |
| pond organism #1 | X | X | X | X | X | X |
| pond organism #2 | X | X |  | X |  | X |

Looking at the chart provided, the students need to develop a classification scheme to distinguish plant and animal cells. The presence of which of the following structures/organelles would be most useful for this purpose?

* 1. Cell wall b. Plasma membrane c. Vacuole d. Nucleus

1. According to the table provided, which pond organism shares the most characteristics with animals?
2. **What feature is similar among all organisms?**
   1. They are composed of one or more cells that function to sustain life.
   2. They are composed of multiple tissue types.
   3. They can consume other organisms to create energy.
   4. They can transform sunlight into food for sustenance.
3. Every cell is surrounded by a thin membrane. What is the main function of this cell membrane?
4. What is the cytoplasm?
5. What is your best explanation for the action occurring in this picture?
6. **Below is a list of functions performed by organisms. Examine the list, then answer question 15 that follows.**

**- gas exchange - stimulus response - reproduction - intake of nutrients - disposal of wastes**

How do these functions compare between single-celled and multi-celled organisms?

1. Single-celled organisms must perform all of these functions with one cell, while multi-celled organisms can have specialized cells for different functions.
2. Single-celled organisms can perform only some of these functions, while multi-celled organisms can perform all of these functions.
3. Neither single-celled organisms nor multi-celled organisms can perform all of these necessary functions.
4. Single-celled organisms can perform all of these functions, while multi-celled organisms can perform only some of these functions.
5. **Which of the following types of organelles are most important in providing a cell with energy?**
   1. Mitochondria b. Cell membrane c. Nuclei d. Vacuoles
6. **Which of the following processes occurs in the cells of plants?**
   1. Exchange of CO2 and O2 b. getting rid of wastes
   2. Making energy for the organism through photosynthesis d. all of these
7. All living organisms are composed of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. In a cell, what is the function of the cell membrane?
9. The name Euglena is derived from two Greek words meaning “good eyeball.” This name refers to the presence of a reddish eyespot on the euglena’s body. What does this eyespot help the euglena find?
10. What exists as a single, self-supporting cell that travels using numerous hair-like cilia?
11. All living organisms, including animals, plants, fungi, bacteria, and protists, must perform certain processes in order to survive. All living organisms must be able to obtain energy, so they can use that energy to perform their life functions. In what part of a living organism do these life functions occur?
12. **Which of the following cell structures is found in plant cells but not in animal cells?**
    1. Nucleus b. Cytoplasm c. Cell membrane d. Chloroplast
13. Details of cellular structures are most easily seen using a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
14. What do flagellum and cilia have in common?