**Unit 3: Cells 2 Study Guide**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Label the cell and describe the function of each organelle.

|  |  |  |
| --- | --- | --- |
| Letter | Name | Function |
| A |  |  |
| B |  |  |
| C |  |  |
| D |  |  |
| E |  |  |
| F |  |  |



B

A

C

D

E

F

1. Which organelle captures and converts sunlight into food? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is this process called?

1. Which organelle transforms carbohydrates into ATP? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Which organelle creates energy for cellular activities? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is this process called?

1. Which organelle would be found in high numbers in muscle cells? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Write the equation for cellular respiration. What are the reactants? What are the products?
3. If oxygen is not present, how do cells create ATP energy? Is this efficient?
4. True/False: Human cells will transition to anaerobic respiration if irregular breathing and over use cause a lack of oxygen. (think about the muscle lab)
5. Pair the following terms:

\_\_\_\_\_\_\_\_\_ AUTOTROPHS a. Respiration

\_\_\_\_\_\_\_\_\_HETEROTROPHS b. Photosynthesis

1. Do all cells contain the same genetic material? \_\_\_\_\_\_\_\_\_\_\_\_\_
2. True or False: Cells regulate their genes based on their function and their environment.
3. List the steps of the **cell cycle** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Where does the cell spend the majority of its “life”?
5. What steps compose mitosis?
6. What would happen if a cell completed mitosis but did not undergo cytokinesis?
7. At the end of mitosis **2 / 4**  daughter cells are formed. They are **identical to / different from**  each other and the parent cell.
8. How does a cancer cell form?
9. Why are cancer cells so dangerous?