**Take Home Cell Twiz**

/27

Name: Date:

1. a) Compare and contrast (what is the same, what is different) prokaryotic and eukaryotic cells. Draw a Venn diagram or chart. Be sure to write about the presence or absence of a particular quality. (**3 marks**)
2. Which one are we? (**1 mark**) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Made of microtubules, this structure gives the cell its shape and supports organelles. Vesicles are carried along these 'train track' structures as they move inside the cell. What is this structure called? (**1 mark**)

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

1. The tail of the sperm cell which allows it to move is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (**1 mark**)
2. **Draw** a normal body animal cell (not a sex cell!). **Label** and **explain the function** of at least **eight (8)** structures. (**4 marks**, ¼ for each correctly drawn structure and ¼ mark for each correct function)
3. What are the names and functions of two plant structures or organelles that are **not** found in animal cells? (**2 marks**)

|  |  |
| --- | --- |
| **Name** | **Function** |
|  |  |
|  |  |

1. Label each of these chemical equations with the appropriate biological process. (**2 marks**)

Glucose + oxygen 🡪 carbon dioxide + water + energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Energy + carbon dioxide + water 🡪 glucose + oxygen \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Draw the **basic structure** of the cell membrane including **appropriate vocabulary** for the molecule that makes up the membrane and how different parts of this molecule behave towards water. (**3 marks**)
2. What is ATP and what does the cell use it for? (**1 mark**) What does ATP stand for?
3. You have put a delicious sugary lollipop (candy) in your mouth. There is an enzyme (protein) in your saliva called *salivary amylase* which breaks down the lollipop making it smaller and smaller. Explain how the specific *salivary amylase* protein is produced by the salivary glands in your mouth. (**5 marks**)

You will need:

* A **large, clear, well organized drawing** of a cell and the organelles *that are part of the pathway to build your protein*. (Is the mitochondrion part of this process? No. So don't include it.)
* **Labels** of all the **structures** along the way.
* **Explanations** of what is happening in **each step** of your drawing.

1. A raw egg with its shell already removed is placed into a solution. Based on the data below, *compared to the egg,* was the solution it was placed in **hypertonic, hypotonic or isotonic**?Explain **WHY** the change in mass occurred. Include a **labeled drawing** to help with your explanation. Your answer should include information about **solute concentrations** in the cell *and* in the solution, **water concentrations** in the cell *and* in the solution, the **selectively permeable membrane**, and the **movement of water**. (**4 marks**)

|  |  |  |  |
| --- | --- | --- | --- |
| **Initial Mass** | **Final Mass** | **Change in Mass** | **% Change in Mass** |
| **70 grams** | **75 grams** | **+ 5 grams** | **+ 7%** |

The solution the egg was placed in was \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ compared to the egg.

**Labeled** drawing and **explanation**: