Unit 1 Retest – Cell Maintenance and Membrane Transport (Lab)

**Cell Theory**

1. *The following is true about the cell theory:*

|  |  |  |
| --- | --- | --- |
| 1. *Cells are the basic unit of all living things*
 |  | 1. *All cells are the same size and shape*
 |
| 1. *All cells have organelles*
 |  | 1. *All cells have a nucleus*
 |

1. *The structural and functional unit of all living organisms is the:*

|  |  |  |
| --- | --- | --- |
| 1. *Cell*
 |  | 1. *Organelle*
 |
| 1. *Organ*
 |  | 1. *Atom*
 |

**Homeostasis**

1. *The principle of homeostasis would account for which of the following conditions:*

|  |  |  |
| --- | --- | --- |
| * 1. *High external temperature causes internal body temperature to rise*
 |  | 1. *High external temperature causes internal body temperature to fall*
 |
| 1. *High external temperature causes internal body temperature to remain the same*
 |  | 1. *High external temperature causes internal body pH to change*
 |

1. Buffers are needed for homeostasis because:

|  |  |  |
| --- | --- | --- |
| * 1. *Buffer proteins make Amino Acids*
 |  | * 1. *Buffers prevent fluctuations in the cell that cause pH to rise.*
 |
| * 1. *Proteins only function in a narrow range of pH, and buffers prevent pH changes.*
 |  | * 1. *Buffers are necessary for osmosis of proteins across a selectively permeable membrane.*
 |



1. *Look at the diagram above. What is the part labeled “****B****” known as?*

|  |  |  |
| --- | --- | --- |
| 1. *Enzymes*
 |  | 1. *Sugars*
 |
| 1. *Phospholipids*
 |  | 1. *Amino Acids*
 |

1. The monomer subunit that carbohydrates are made of are:

|  |  |  |
| --- | --- | --- |
| 1. *Enzymes*
 |  | 1. *Sugars*
 |
| 1. *Phospholipids*
 |  | 1. *Amino Acids*
 |

1. Carbohydrates are made by:

|  |  |  |
| --- | --- | --- |
| 1. *Mitochondria*
 |  | 1. *Chloroplasts*
 |
| 1. *Ribosomes*
 |  | 1. *Cell Walls*
 |

1. A rise in body temperature would probably result in the following response:

|  |  |  |
| --- | --- | --- |
| 1. *Vasoconstriction in the skin*
 |  | 1. No change, because homeostasis means that an organism “stands still” at a “similar” level.
 |
| 1. *Vasodilation in the skin*
 |  | 1. *Piloerection*
 |

1. *Catalase* (the enzyme from our laboratory activity) which decomposes Hydrogen Peroxide into:

|  |  |  |
| --- | --- | --- |
| 1. *Liquid Water and Oxygen gas*
 |  | 1. *Liquid Peroxide and Oxygen Gas*
 |
| 1. *Peroxide Gas and Liquid Oxygen*
 |  | 1. *Hydrogen Gas and Liquid Water*
 |

1. A cell with a buffer functions correctly because:

|  |  |  |
| --- | --- | --- |
| 1. Cells can function regardless of the pH so long as a buffer is present.
 |  | 1. Cells regulate buffers, enzymes and reactions independently.
 |
| 1. Most enzymes don’t need buffers.
 |  | 1. Buffers are only needed when there is a temperature change.
 |

**Short Response: Please read the directions carefully.**

1. **Homeostasis**

Homeostasis is a defining feature of all living things. It is a state of balance that all organisms must maintain to continue living. Explain in detail how organisms’ bodies maintain constant temperature.

* 1. List and describe three mechanisms that the body uses to maintain Homeostasis.
	Explain how they work. (3)
	2. Why is it important that cells maintain a stable environment (constant pH and temperature constant)?

Be specific. Do not write, “Things won’t work”.

1. **Feedback**

 Review the following models and the questions that follow.

 **Model A Model B**

** **

1. Which of the model shown above is the correct one? Circle one. (1)

 Model A or Model B

1. Explain **why** the other model is incorrect. You must provide at least **two reasons**. (2)



**Blood Sugar Levels**

1. When high levels of sugar are present in the blood, what is this condition called? (1)
2. Look at the graph; what does the **curve** **A** represent? (1)