**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Block: \_\_\_\_\_**

**Biochemistry Test Review**

**Part I: pH**

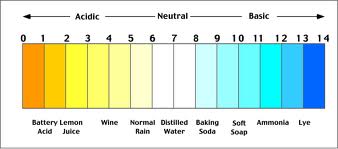
1. A neutral pH = \_\_\_\_\_\_\_\_\_\_
2. Basic or alkaline pH range is from \_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_
3. Acidic pH range is from \_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_
4. List two characteristics you could use to identify an acid: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

1. List two characteristics you could use to identify a base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

1. For the following three items, write B if it represents a Basic pH, A if it represents an Acidic pH, and N if it represents a Neutral pH:
   1. pH between 1 and 6.9\_\_\_\_
   2. pH between 7.1 and 14\_\_\_\_
   3. pH of exactly 7\_\_\_\_
2. For the following substances, write B if it is a Base, A if it is an Acid, or N if it is Neutral:
   1. Pure water \_\_\_\_
   2. Vinegar\_\_\_\_
   3. Bleach\_\_\_\_
   4. Lime juice\_\_\_\_
   5. Soap\_\_\_\_
   6. Digestive juices of the stomach\_\_\_\_



What is the strongest acid in the above scale? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the pH of the strongest acid in the above scale? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the weakest base in the above scale? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

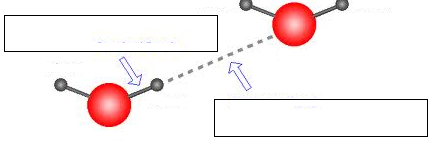
What is the pH of the strongest base in the above scale? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part II: Water Chemistry**

Define polar: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Draw a water molecule and label the oxygen and hydrogen:

Label the covalent bond and the hydrogen bond:



A student dissolves table salt in water to create saltwater.

.

What is the solute? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the solvent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the solution? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Define Cohesion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Define Adhesion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the most abundant molecule in all living things? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is water organic or inorganic? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

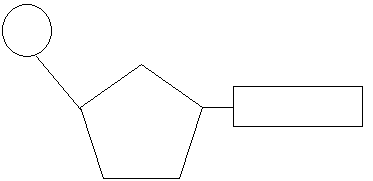
**Part III: Macromolecules**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Macromolecule | Monomer | Elements | Function | Examples |
| Carbohydrate  (polysaccharide) |  |  |  |  |
| Lipid |  |  |  |  |
| Protein |  |  |  |  |
| Nucleic acid |  |  |  |  |

Another word for protein is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(because they contain PEPTIDE bonds)

Label the parts of a nucleotide:



**Part IV: Enzymes**

Enzymes usually end in what three letters? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Enzymes are what type of macromolecule? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

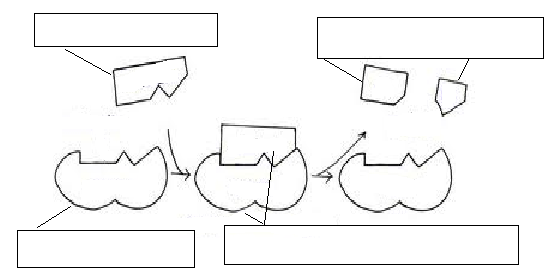
List two things that affect how an enzyme works.

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

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

Define metabolism: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Label the enzyme, substrate, enzyme-substrate complex, and products in the diagram:



What is the term used to describe the energy needed to ACTIVATE a reaction started? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part V: Matter**

Fill in the atomic symbol for the following elements:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Carbon | Hydrogen | Oxygen | Nitrogen | Phosphorus |
|  |  |  |  |  |

What is the basic unit of MATTER? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name the three particles that make up and atom: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Define and give an example for:

Physical change: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

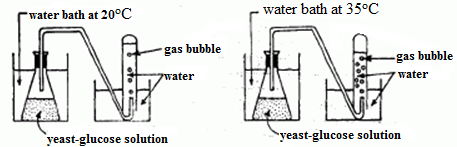
Chemical change: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What makes a molecule organic? What element must it contain? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

If a molecule does not contain carbon, what do we classify it as? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

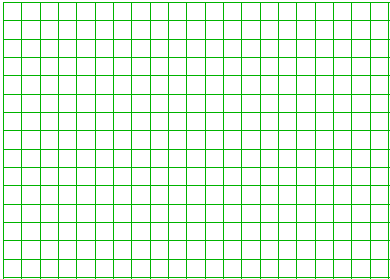
The apparatus represented in the diagrams was used to investigate the effect of temperature on fermentation in yeast. Each of two flasks containing equal amounts of a glucose-yeast solution was submerged in a controlled temperature water bath, one at 20oC and one at 35oC. The total number of gas bubbles produced by the solution in each flask was recorded every 5 minutes for a period of 25 minutes. The data are summarized in the table shown

|  |  |  |  |
| --- | --- | --- | --- |
| Time (minutes) | Total number of bubbles produced | |  |
| Temp. | 20oC | 35oC |
| 5 | 0 | 5 |
| 10 | 5 | 15 |
| 15 | 15 | 30 |
| 20 | 30 | 50 |
| 25 | 45 | 75 |

 .

Using the information in the data table, construct a graph following the directions below.

1. Mark an appropriate scale on each axis
2. Plot the data for the number of bubbles produced at 20oC on the grid. Surround each point with a small triangle and connect the points. 
3. Plot the data for the number of bubbles produced at 35oC on the grid. Surround each point with a small circle and connect the points.
4. Label your axes and add a title.



**Number of Bacterial Colonies**

**Number of Bacterial Colonies**

**Number of Bacterial Colonies**

**Number of Bacterial Colonies**