Name: Date: 10/31/14 Class:

**Due: Monday, Nov. 3/Tuesday, Nov. 4**

**\*5 points in your academic grade**

**Part 1: Notes on Specific Enzymes**

**Directions:** Use the class set of enzyme cards at your table to fill in the information below. If you do not finish in class, you can access the cards are on my Weebly: [ecampbellasuprep.weebly.com/enzymes.html](http://ecampbellasuprep.weebly.com/enzymes.html)

|  |  |  |
| --- | --- | --- |
| **Name of enzyme** | **What it is used for** | **How it works (include the substrate and product)** |
| Isomerase |  |  |
| Proteases and lipases |  |  |
| Carbohydrases | Biological detergents |  |
| Protease |  |  |
| Lactase |  |  |

**Part 2: Advantages/Disadvantages of Using Enzymes in Industry**

Determine whether each of the following is an advantage (A) or a disadvantage (D) of using enzymes in industry:

|  |  |
| --- | --- |
| Prompt | Circle “A” for Advantage/“D” for Disadvantage |
| 1. Very sensitive to the conditions they are in e.g. for most enzymes the temperature must be below 45℃.
 | **(A) (D)** |
| 1. Whole microbes can be used as they produce enzymes however, they need food and oxygen supplies and the waste products need to be removed.
 | **(A) (D)** |
| 1. If the temperature and pH are not controlled the enzymes could denature. This costs money.
 | **(A) (D)** |
| 1. They reduce the temperature and pressure needed for the reaction.
 | **(A) (D)** |
| 1. The pH must also be controlled to suit the enzyme involved.
 | **(A) (D)** |
| 1. Pure enzymes are expensive to produce.
 | **(A) (D)** |
| 1. Using enzymes makes the reaction more efficient.
 | **(A) (D)** |
| 1. Using enzymes to catalyze reactions saves money in production costs.
 | **(A) (D)** |

**Part 3: Enzyme Supplements**

There is currently a fad related to enzyme supplements (like vitamins). Do you think it is important for our health to take enzyme supplements? Write a 3-5 sentence paragraph reflecting on the value of enzyme supplements.

The following optional links may help you write your response:

* (From an enzyme supplement company) <http://www.eves-best.com/digestive-enzymes.htm>
* (Criticizing supplements) <http://www.elephantjournal.com/2012/09/throw-away-your-digestive-enzyme-supplements/>
* (More neutral perspective) <http://www.takepart.com/article/2013/05/08/jane-says-raw-foodism-raw-deal> (starting halfway down)