Enzyme Activity Post-Lab Assessment

1. Enzymes work by lowering the ________________. This happens by the enzyme binding substrate in the _______________.
   a. Energy of activation; active site
   b. Energy of activation; allosteric site
   c. Energy of deactivation; active site
   d. Energy of deactivation; allosteric site

2. What kind of macromolecule is an enzyme?
   a. Deoxyribonucleic acid
   b. Lipids
   c. Proteins
   d. Carbohydrates

3. A single change in an amino acid in an enzyme’s active site can _______________. Select all that apply.
   a. does not affect enzyme activity
   b. lower the affinity of the enzyme for the substrate
   c. change the enzyme’s 3-dimensional conformation
   d. affect the rate of the reaction
4. In this image, identify the substrate and the enzyme.

http://pdb101.rcsb.org/motm/74

5. In the following reaction, identify the product.
6. As the reaction proceeds, the product _____________.
   a. increases
   b. decreases
   c. stays the same

7. Match the terms.
   a. Amylase   Product ______
   b. Maltose   Enzyme ______
   c. Starch    Substrate ______

8. In humans, where is amylase produced in the body?
   a. In the intestines and salivary glands
   b. In the salivary glands and pancreas
   c. In the intestines and pancreas
   d. In the salivary glands
9. What is the optimal pH for the human amylase activity?

![Effect of pH on Amylase Activity](image)

a. 4  

b. 6  

c. 7  

d. 8

10. You can measure the amount of ___________ remaining or ___________ produced as an indicator of enzyme activity.

a. Substrate; product  

b. Product; substrate  

c. Enzyme; substrate
11. What is true of a colorimetric assay? Select all that apply.

a. The color intensity is indicative of the amount of the compound.

b. A colorimetric assay uses a reagent that changes color in the presence of a compound of interest.

c. A colorimetric assay can be used to measure the amount of product produced in a chemical reaction.

d. A colorimetric assay measures the amount of substrate in a reaction.

12. You will use the ________ reagent to indicate how much maltose is present.

a. Amylase

b. Maltose

c. DNS

d. Maltonic acid

13. Using the spectrophotometer you can measure the absorbance of light by a sample. This absorbance will tell you what?

a. The concentration of the substrate

b. The concentration of the product
c. The concentration of the colorimetric reagent

d. The concentration of the enzyme

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