
Date _____

Name _____ Student No. _____

Teacher _____ School _____



Biology 12

Section Assignment 2.3

Remember to submit the following with this assignment:

Title	From	Marks
Part A: Enzyme Matching	2.3	9
Part B: Enzyme Quiz	2.3	10
Part C: Enzyme Short Answer	2.3	4

Section Assignment 2.3 Part A

Enzyme Matching

Once you have completed this assignment, begin to review for your Module 2 Exam. Use the Glossary you have created (this could be a list organized alphabetically or by topic, flash cards, or graphic organizers such as concept maps) as well as the guided practices and section assignments you have completed as study tools. You may wish to use 'QuizmeBC', a BC Ministry of Education online exam preparation resource—choose 'Cell Processes and Applications' to have a topic-specific set of questions and answers generated for you.

Write the letter of the term in Column A beside the correct definition in Column B.

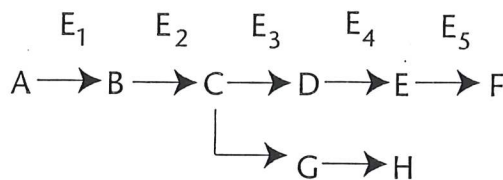
Column A	Column B
A. vitamins	1. All of the chemical reactions that occur in a cell _____
B. induced fit model	2. A non-protein molecule required for enzyme function _____
C. competitive inhibitor	3. An essential component of an organism's diet; often form part of coenzymes _____
D. denature	4. Cause a change to an enzyme's normal three-dimensional shape so that it no longer functions _____
E. reaction rate	5. Reactant(s) in a biochemical reaction, catalyzed by enzymes _____
F. cofactor	6. Explanation stating that an enzyme slightly changes its shape in order to better fit with its specific substrate _____
G. substrate	7. The speed at which reactants are converted to product(s) in a chemical reaction _____
H. metabolism	8. A molecule that binds to an enzyme and renders the enzyme incapable of accepting a substrate molecule _____
I. non-competitive inhibitor	9. In a reaction pathway, product molecules halt the production of any more product _____

Section Assignment 2.3 Part B

Enzyme Quiz

Select the best response for the following multiple choice questions.
(2 marks each)

1. Enzymes increase the rate of a reaction by:
 - A. becoming denatured
 - B. producing coenzyme molecules
 - C. decreasing the required energy of activation
 - D. dissolving molecules that compete with a substrate in a reaction
2. The function of thyroxin is:
 - A. to cause sperm production
 - B. to decrease rate of digestion
 - C. to suppress the 'fight or flight' response to stimuli
 - D. to increase an organism's metabolic rate
3. In an experiment, substrate A was added to a beaker containing equal amounts of enzymes E1 to E5. The metabolic pathway in the diagram below shows the reactions that occurred. After ten minutes a competitive inhibitor for E3 is added to the beaker and the reactions continue. After the inhibitor is added:



- A. The rate of production of H would increase.
- B. The rate of production of E would decrease.
- C. The rate of production of B would increase.
- D. The rate of production of D would increase.

4. How is an enzyme-catalyzed reaction affected by the addition of more enzyme?
- A. The rate of reaction is slowed.
 - B. More product will be formed.
 - C. The rate of reaction is increased.
 - D. There is no affect when more enzyme is added.
5. How is an enzyme-catalyzed reaction affected by the addition of more substrate? (Assume all enzyme active sites are already occupied.)
- A. The rate of reaction is slowed.
 - B. More product will be formed.
 - C. The rate of reaction is increased.
 - D. There is no effect when more substrate is added.

Marks

10

Section Assignment 2.3 Part C
Enzyme Short Answer

Explain the difference between the following pairs of terms:

1. Competitive and non-competitive inhibition (2 marks)
2. The 'lock and key' model and the 'induced fit' model (2 marks)

Marks

4