

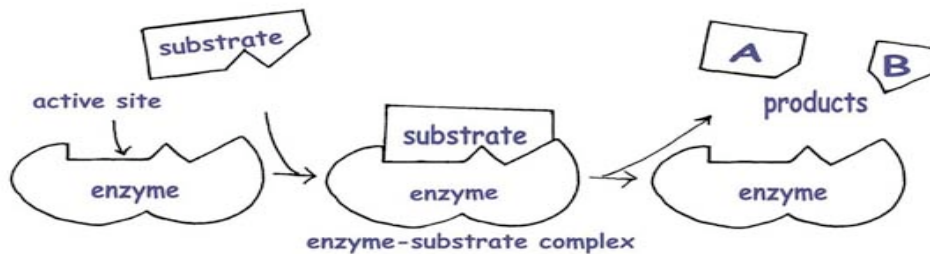
## Bio Chemistry Practice Test

- If an atom has 5 protons and 6 electrons, what is the charge of the atom?
  - positive
  - negative
  - neutral
  - ionic
- Protons have a \_\_\_\_\_ charge.
  - negative
  - positive
  - neutral
  - nucleus
- The type of bond between the hydrogen and oxygen atoms within a water molecule
  - Hydrogen bonding
  - Covalent bonding
  - Ionic bonding
  - Intermolecular
- What happens in the formation of ionic bonds?
  - electrons are shared
  - an electron is transferred from one atom to another
  - two atoms of opposite charges attract
  - a and c only
  - b and c only
- An ion is
  - an atom with more or less protons than normal
  - atoms of an element with different number of neutrons
  - an atom with the same number of protons and electrons
  - an atom with more or less electrons than the number of protons
- $H^+$  is the symbol for the hydrogen ion. It consists of
  - a proton
  - a neutron
  - an electron
  - none of these
- Acids contribute what to a water solution
  - hydrogen atoms (H)
  - NaCl
  - hydroxide ions ( $OH^-$ )
  - hydrogen ions ( $H^+$ )
- The pH scale measures the concentration of what ion?
  - $Na^+$
  - $OH^-$
  - $Cl^-$
  - $H^+$
- A solution of pH of 3 is
  - found in your saliva
  - neutral
  - basic
  - a solution with a greater concentration of  $H^+$  ions than  $OH^-$
- Why is the pH of pure water neutral?
  - greater concentration of  $H^+$  ions than  $OH^-$
  - $H^+$  ions equal to  $OH^-$  ions
  - has dissolved salts in it

## Bio Chemistry Practice Test

11. Cohesion of water molecules is the result of
- a) covalent bonding
  - b) ionic bonding
  - c) hydrogen bonding
  - d) a catalyst
12. Capillary action is important for which of the following biological process
- a) blood moving in a narrow vessel
  - b) fluid running down your nose when you have a cold
  - c) moving your toes
  - d) photosynthesis
13. Capillary action is the result of
- a) adhesion
  - b. covalent bonding
  - c) ionic bonding
  - d) cohesion
  - e) a and d

*Use the diagram below to answer questions 14-15*



14. If the substrate is a protein what would products A and B represent?
- a. Monosaccharides
  - b. Amino Acids
  - c. Nucleotides
  - d. Glucose
15. If A and B are each a monosaccharide what would the substrate be?
- a. Polysaccharide
  - b. Disaccharide
  - c. Polymer
  - d. Enzyme

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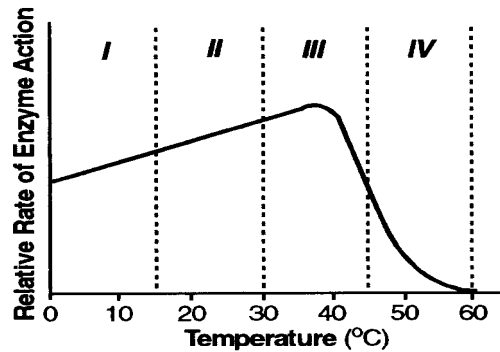
A) *A*

B) *B*

C) *C*

D) *D*

Questions 16 through 17 refer to the following:



16) Which section of the graph includes the point at which the enzyme started to denature?

A) *I*

B) *II*

C) *III*

D) *IV*

17) What is the optimum temperature for the enzyme?

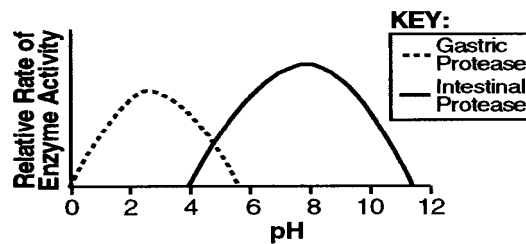
A) 37°C

B) 0°C

C) 60°C

D) 55°C

18) The graph below shows the effect of pH on the rate of action of two different enzymes.



In which pH range do *both* enzymes show some activity?

A) 0-4

B) 5.9-8

C) 10-12

D) 4.5-5

19) Which organic compound is correctly matched with the subunit that composes it?

A) lipid — sucrose

C) maltose — amino acid

B) protein — fatty acid

D) starch — glucose

## Bio Chemistry Practice Test

- 20) Which is an example of an inorganic compound?  
 A) glucose                      B) starch                      C) water                      D) maltase
- 21) An organic compound that has hydrogen and oxygen in a 2:1 ratio would belong to the group of compounds known as  
 A) lipids                      B) proteins                      C) fatty acids                      D) carbohydrates
- 22) The linking together of many molecules of glucose may produce a molecule of  
 A) starch                      B) amino acid                      C) hemoglobin                      D) fatty acid
- 23) The chart below shows the elements present in four different chemical compounds (A, B, C, and D). An X indicates the presence of a particular element. Which compound could be a carbohydrate?

Elements	Compounds			
	A	B	C	D
bromine	X			
carbon		X		X
fluorine				X
hydrogen	X	X		X
lead			X	
nitrogen			X	
oxygen		X	X	

- A) A                      B) B                      C) C                      D) D

24. There are many different enzymes located in a cell. How is a specific enzyme able to catalyze a specific reaction?
- a. Different enzymes are synthesized in specific areas of the cell.
  - b. Most enzymes can catalyze many different reactions.
  - c. An enzyme binds to a specific substrate to catalyze the specific reaction.
  - d. Enzymes are transported to specific areas of the cell depending on what type of reaction they catalyze.
25. What causes tomatoes to ripen much more slowly in a refrigerator than they do if left on a table at room temperature?
- a. Tomatoes need sunlight to ripen
  - b. Humidity accelerates the ripening process
  - c. Low temperatures reduce the action of ripening enzymes.
  - d. Enzymes produced by bacteria inhibit ripening.

