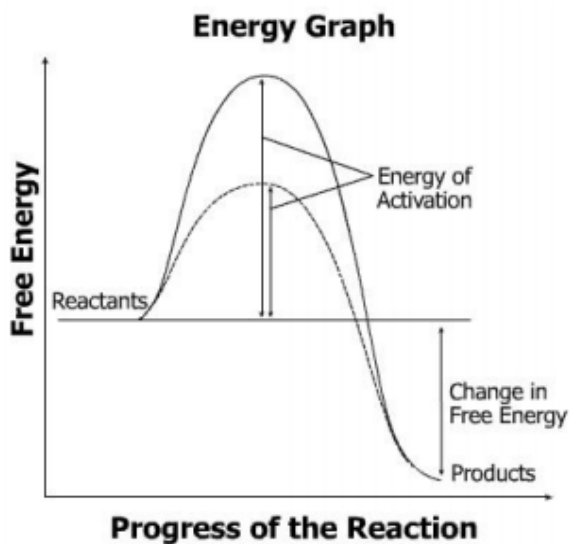


Unit 2 (Biochemistry) Practice SOL Questions



Key	
—	reaction without enzyme
- - - - -	reaction with enzyme

What can be concluded from this graph?

- A The reactants have less energy than the products.
- B The enzyme is consumed during the course of the reaction.
- C The enzyme lowers the energy of activation for the reaction.
- D The amount of free energy produced in the reaction increases with an enzyme.

Directions: Click and drag the correct answer to each box.

A water molecule is . It has a slightly charge on the atom and a slightly charge on the two atoms.

polar

nonpolar

hydrogen

oxygen

positive

negative

Proteins are among the most diverse group of macromolecules because of the —

- A** different amino acids that can be connected in many sequences
- B** different types of bonds linking amino acids together
- C** energy phosphate groups that the amino acids contain
- D** link between each DNA base and an amino acid in a protein

Overheating an enzyme results in the enzyme's loss of —

- F** net electrical charge
- G** ability to catalyze a reaction
- H** storage of a large amount of chemical energy
- J** storage of inherited information

Some insects can stand on the surface of water because water —

- A** has a high specific heat
- B** has a high boiling point
- C** is a good evaporative coolant
- D** is cohesive and adhesive

Both lipids and carbohydrates are important in animal cells because both —

- A** store energy
- B** contain nitrogen
- C** form cell walls
- D** provide insulation

Most cellular activities are processes regulated by the action of —

- F carbohydrates
- G enzymes
- H lipids
- J polysaccharides

The unique properties of water enable life to exist on Earth. Which of these is a property of pure water?

- F Its solid form is more dense than its liquid.
- G It has a low heat absorption capacity.
- H It is slightly more acidic than air.
- J It dissolves many substances.

Unlike other animals, mammals can perspire. The main benefit of perspiring is that it —

- F removes extra water from the cells
- G cools the skin with evaporation
- H removes dirt from the surface of the skin
- J relaxes the muscles

Which of the following molecules is most abundant in the cells of the human body?

- A Amino acids
- B Nucleotides
- C Lipids
- D Water

Test Paper Results

Chart A

pH	Red Litmus	Blue Litmus	pH Paper
Acid - pH2	red	red	red
Acid - pH4	red	red	orange
Acid - pH6	red	red	yellow
Base - pH8	blue	blue	green
Base - pH10	blue	blue	blue

Chart B

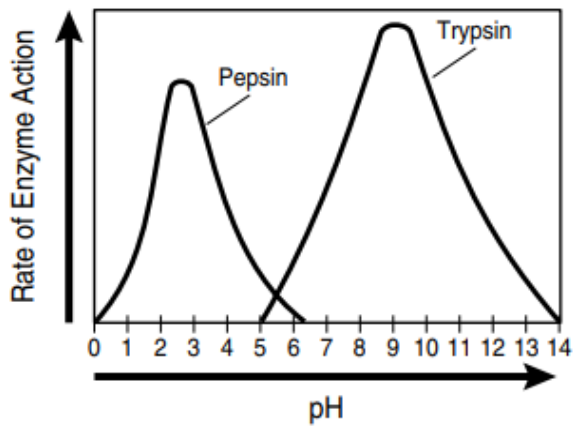
Substance	Red Litmus	Blue Litmus	pH Paper
Water	red	blue	yellow-green
Apples	red	red	red-orange
Beans	red	red	yellow
Milk	red	blue	yellow
Shrimp	red	blue	yellow-green

Chart A shows how changes in pH cause testing paper to change color. Chart B shows how testing papers reacted with several experimental substances. Which of these has a pH of about 3?

- A Apples
- B Beans
- C Milk
- D Shrimp

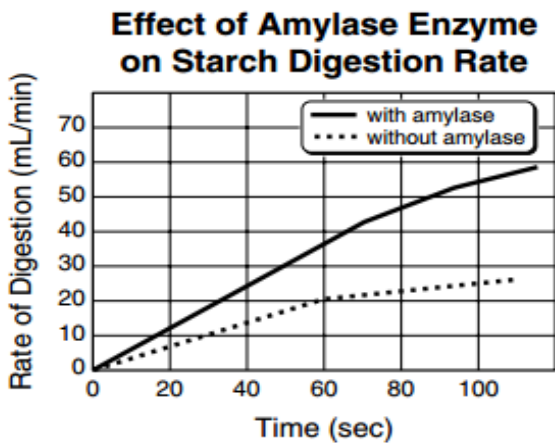
Peroxidase is an enzyme that breaks down hydrogen peroxide in cells. It accomplishes this because of its structure. What part of the enzyme is involved in catalytic activity?

- F Binding pocket
- G Pleated sheet
- H Active site
- J Quaternary structure



This graph shows that —

- A more enzymes are present at a higher pH
- B pepsin is less sensitive to pH than trypsin
- C pepsin is less effective at low pH than trypsin
- D pH affects the activity rate of enzymes



According to the graph, addition of the enzyme amylase causes the reaction to —

- A slow down
- B speed up
- C give off heat
- D take in heat