Name:_____ Period:_____ Date:_____

Unit 1 Review

CLG 3.1.1 A: Water

1. Why can water dissolve salt, sugar, and so many other substances?

2. **True or False:** Water is an organic molecule.

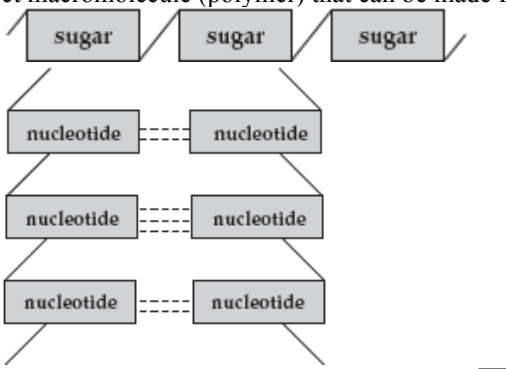
3. Match the following property of water to the correct description.

i) Explains why cells burst when frozen _____
ii) Makes water ideal for transporting substances ____
iii) Allows bugs to walk across water _____
iv) Creates surface tension _____

A) Cohesion
B) Universal Solvent
C) Density
D) Surface Tension

CLG 3.1.1 B: Macromolecules

1. Write the correct macromolecule (polymer) that can be made from the following monomers:



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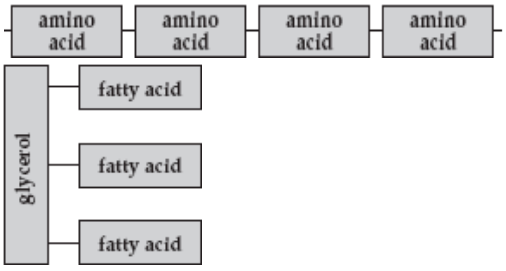


_____

_____

2. **Circle** the above diagram that could represent amylase, an enzyme.

3. Match each of the following descriptions to the correct macromolecule. (Answers are used more than once).

i) Provides energy to bears during hibernation _____
ii) Used as an immediate source of energy_____
iii) Main component of cell membranes_____
iv) repels water_____
v) provides amino acids when broken down_____

A) Protein
B) Lipid
C) Carbohydrate

CLG 3.1.1 C: Vitamins/Minerals

1. *For each of the following patient scenarios, say what vitamin the patient is most likely lacking.*

A) A child has been diagnosed with Rickets, a disease that prevents proper bone formation.

B) A mother accidentally cuts her finger while cutting onions for dinner. However, her cut does not stop bleeding for three hours.

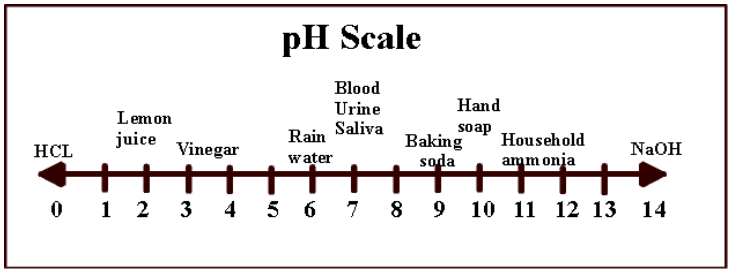
C) A firefighter gets blown against a wall by a powerful explosion. His wound does not heal for months.

D) A teenager constantly gets sick. Her body's immune system is not functioning properly, and she always gets bacterial infections.

2. What is the biggest difference between vitamins and minerals?

Name:_____ Period:_____ Date:_____

CLG 3.1.2 A: pH Scale



1. What is the strongest acid shown on the pH scale?

2. Is baking soda considered a strong acid, weak acid, strong base, or weak base?

3. What is a stronger acid- rain water or vinegar?

4. What is pH of water? _____ What is this solution also called? _____

CLG 3.1.2 B: Enzyme Regulation

1. Observe the following data table showing how effective two different enzymes are at various pH levels.

pH	Enzyme A Efficiency	Enzyme B Efficiency
0	10	0
1	30	0
2	55	0
3	75	0
4	90	0
5	85	20
6	70	35
7	60	45
8	35	50
9	20	65
10	0	80
11	0	55
12	0	40
13	0	30
14	0	20

A) How high was the enzyme efficiency for enzyme A at a pH of 8?

B) At what pH does enzyme A work best at?

C) In what type of solution (acid/base/neutral) does enzyme B work the best in?

D) Which enzyme probably works in your stomach (a very acidic environment)?

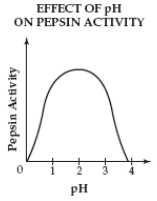
2. How will acid rain (rain with a pH of 1-3) affect enzyme activity in plants?
   A) Enzyme activity will increase
   B) Enzyme activity will decrease
   C) Enzyme activity will increase then decrease
   D) Enzyme activity will stay the same

3. What happens to an enzyme when it is exposed to extremely high temperatures?
   I. The enzyme changes shape
   II. The enzyme becomes inactive
   III. Enzyme activity increases

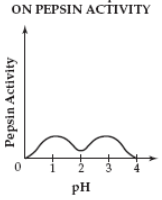
   A) Only I is true
   B) Only II is true
   C) I and II are true
   D) I, II, and III are true

4. Cells in the stomach produce pepsin, an enzyme, to help digest food. Pepsin works best at a pH of 2. Which of these graphs most likely shows what will happen to the activity of pepsin as the pH of the stomach is increased?

A.



B.



C.