**Unit 2 Test Review: Scientific Method, Water, Macromolecules, Enzymes**

1. The attraction among molecules of different substances is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. Why is water necessary to your body? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Which of the following are examples of carbohydrates?

a. amino acids and nucleotides b. fatty acids and starches c. sugars and starches

4. What type of macromolecule includes fats, oils and cholesterol?

5. The building blocks of proteins are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. Do catalysts increase or decrease activation energy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. DNA and RNA are examples of what type of macromolecule? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. What do enzymes act on?

a. products b. substrates c. substances

9. Which of the following makes up a water molecule?

a. one atom of H and one atom of O

b. two atoms of H and one atom of O

 c. one atom of H and two atoms of O

10. Why does ice float on water? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. If you dissolve sugar in water, the sugar is the: a. solvent b. solute

12. Which of the following is NOT a monomer?

a. glucose molecule b. an amino acid c. a nucleotide d. a protein

13. What are some functions of proteins? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14.What is the energy needed to start a reaction called? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. True or False: All enzymes can catalyze any type of reaction, not a specific one.

16. What is a substance called that speeds up chemical reactions? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. Which of the following elements is found in nucleic acids but not in proteins, carbohydrates, or lipids?

 a. C b. H c. O d. P

18. Do carbohydrates provide organisms with short-term or long-term energy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. What property of water prevents lakes, ponds and the oceans from fluctuating in temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20. An enzyme, pepsin, is found in the stomach. The stomach has a pH of 2. What would happen to pepsin if you placed it into the small intestines that has a pH range between 7-9? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21. Which macromolecule is this a picture of?

22. What is the ratio of carbon atoms to hydrogen atoms in carbohydrates? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. Which macromolecule is this a picture of?



24. Explain what a control group is in an experiment and give an example of one.

25. Bill Nye is creating an experiment to test the effects of temperature on enzyme function. He wants to know at what temperature the enzyme trypsin works best at. Which one is the independent variable and which is the dependent variable?

26. Mrs. Percy is sitting quietly and is taking notes on her students’ behavior. Which step of the scientific method is this an example of?

27. Jack notices that the flower bed he planted isn’t thriving, so he increases the amount of water he puts on the plants. Which step of the scientific method is this an example of?

28. Water molecules are polar. The oxygen side is positive/negative and the hydrogen side is positive/negative. Underline or circle the correct choices for this example.

29. What is the monomer for carbohydrates called?

30. What would happen to an enzyme that is used to working at a temperature of 30 degrees but is then placed in a 100 degree environment? Explain.

31. What macromolecule has the elements C, H, O, and N?

32. What property of water allows it to move from the roots to the leaves of a plant?

33. Which pH is the most acidic?

a. 4.21 b. 4.52 c. 4.67 d. 4.88

34.What is the monomer for nucleic acids?

35. DNA and RNA are what type of macromolecule?

36. Where does a substrate bind to on an enzyme?

37. An amino acid is to protein as:

a. Fat is to protein b. DNA is to RNA c. Sugar is to fat d. Simple sugar is to starch

38. Which part of the pH scale has the highest H+ concentration?

39. Is a lipid polar or nonpolar? What would happen if it were added to water?

40. What property of water allows hydrogen bonds to form among adjacent molecules?