Textbook Questions – The Unique Nature of Pure Water

*Use pages 58-63 in your textbook to answer the following questions.*

1. All matter is made of \_\_\_\_\_\_\_\_\_\_.
2. What is the difference between an element and a molecule?
3. What is a hydrogen bond?
4. How strong is a hydrogen bond?
5. Diagram the three water molecules bonded together (figure 3.1).
6. What is the difference between temperature and heat?
7. How is heat transferred from substance to substance?
8. What are the three states of matter?
9. Water is the only substance that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs in all three states on Earth.
10. Describe the processes of evaporation and of boiling.
11. Describe molecule speed as liquid water cools.
12. Density –
13. What happens to the density of water as it cools?
14. Describe the density of water below 4 degrees Celsius. Why?
15. Why is a floating ice layer important to aquatic organisms?
16. What is specific heat and what is heat capacity?
17. Water has one of the \_\_\_\_\_\_\_\_\_\_\_ heat capacities of any naturally occurring substance.
18. What does this mean for marine organisms?
19. What is evaporative cooling?
20. Cohesion –
21. Surface tension –
22. Adhesion –
23. What property makes it possible for organisms such as water striders to walk on water?
24. Viscosity –
25. \_\_\_\_\_\_\_\_\_\_\_ liquids have a \_\_\_\_\_\_\_\_\_\_\_\_\_ viscosity than warmer ones. What are adaptations plankton have for staying afloat in less viscous tropical waters?
26. Why is water called the universal solvent?
27. Salts –
28. What happens when a salt crystal is placed in water?