**Unit 1 DIA Study Guide**

**Water, Macromolecules, Enzymes, and Activation Energy**

1. Describe the following properties of water.
	1. Polarity
	2. High Specific Heat
	3. Cohesion
	4. Adhesion
	5. Universal solvent
2. Which property of water is shown below?
3. Which property of water is shown below?



1. Which property of water is shown below?
2. Draw, label, and color the pH scale.
3. Draw the structure of a carbohydrate (page 45)
4. Draw a structure of a lipid (page 46 – Figure 2.13)
5. Draw a structure of a protein (page 47 – Figure 2.15)
6. Draw AND label a structure of a nucleic acid (page 230 – Visual Vocab)
7. What is the function of carbohydrates?
8. What is the function of lipids?
9. What is the function of proteins?
10. What are the building blocks of proteins?
11. What is the function of nucleic acids?
12. Give two examples of carbohydrates.
13. Give two examples of lipids.
14. Give two examples of proteins
15. Give two examples of nucleic acids
16. What is an enzyme?
17. What macromolecule is an enzyme?
18. What is a catalyst?
19. What is activation energy?
20. How does a catalyst affect the activation energy of a chemical reaction?
21. How does an enzyme affect reaction rate?
22. Suppose that the amino acids that make up an enzyme’s active site are changed. How might this change affect the enzyme?
23. Some organisms live in a very acidic environment. How would that enzyme react if it were placed in a basic environment?
24. What happens to enzyme action when the pH or temperature reaches extreme amounts?
25. What does the term “denature” mean?
26. Which line below do you want your enzymes to function at – Mark an X on the line.