

Name _____

Period _____

AP Biology

Date _____

CHAPTER 2 GUIDED NOTES: THE NATURE OF MOLECULES

1. Briefly review the structure of atoms.

2. Helium has an atomic number of 2 and atomic mass of 4. Explain.

3. Define isotope and give some examples.

4. How are isotopes used in biology?

5. What are ions? Distinguish between cations and anions.

6. What happens when electrons change levels?

7. Distinguish between oxidation and reduction reactions. Explain the significance of oxidation and reduction reactions in organisms.

8. What is the significance of valence numbers?

9. What are the most common elements in the human?

10. Why do atoms form covalent vs. ionic bonds?

11. How do non-polar covalent bonds differ from polar covalent bonds?

12. What is a hydrogen bond? How does it form and how is it different from a covalent bond?

13. Sketch a few molecules of water, indicate their polarity, and where H bonds form.

14. Why is H bonding so important to water's properties?

15. Distinguish between hydrophobic and hydrophilic molecules

16. List the “special” properties of water and give an example of why the property may be important to living things.

a. _____

b. _____

c. _____

d. _____

17. Explain the pH scale.

18. What is a buffer? How do they work? Why are they necessary in biological systems? Give an example.

