**CHAPTER 6 SECTION 4 OUTLINE QUIZ #5**

1. What element is the compound of almost all biological molecules?
2. \_\_a\_\_ chemistry is the study of organic compounds, which are those containing \_\_\_b\_\_\_.
3. Carbon compounds can be in the shapes of \_\_a\_\_, \_\_\_b\_\_, or \_\_c\_\_.
4. Carbon can form \_\_\_a\_\_ covalent bonds because it has four \_\_\_b\_\_\_.
5. \_\_a\_\_ are large molecules called \_\_\_b\_\_, which are formed by joining smaller organic molecules known as \_\_c\_\_.
6. \_\_a\_\_ is a reaction that builds macromolecules by creating \_\_b\_\_ bonds and releasing a \_\_c\_\_ molecule.
7. Breaking down polymers occurs in a reaction known as \_\_a\_\_, in this case a \_\_b\_\_ molecule is required to break the bonds.
8. The four major categories of macromolecules are; \_\_a\_\_, \_\_b\_\_, \_\_c\_\_, and \_\_d\_\_.
9. The 6 most common elements in organic molecules are \_\_a\_\_, \_\_b\_\_, \_\_c\_\_, \_\_d\_\_, \_\_e\_\_, and \_\_f\_\_.
10. \_\_a\_\_ are composed of carbon, hydrogen, and oxygen in a ratio of one \_\_b\_\_ and two \_\_c\_\_ atoms for each \_\_d\_\_ atom. The general equation is \_\_e\_\_.
11. The monomer for carbohydrates are referred to as \_\_a\_\_ or simple sugars. They include \_\_b\_\_, \_\_c\_\_, and \_\_d\_\_. GIVE AN EXAMPLE OF WHERE EACH IS FOUND.
12. A \_\_a\_\_ is formed when two monosaccharide’s are combined together. They include \_\_b\_\_, \_\_c\_\_, and \_\_d\_\_.

***BONUS***: EXPLAIN WHAT EACH IS MADE OF.

1. Carbohydrates existing of 3 or more monosaccharides are referred to as \_\_a\_\_. They include \_\_b\_\_, \_\_c\_\_, and \_\_d\_\_.
2. The primary function of \_\_a\_\_ is as an energy source, short term energy \_\_b\_\_, and \_\_c\_\_ support.
3. \_\_a\_\_ are composed of the same elements as carbohydrates however, there is more \_\_b\_\_ and \_\_c\_\_.
4. The monomer of lipids are referred to as \_\_a\_\_ which is a chain of \_\_b\_\_ atoms bonded to hydrogen and other \_\_c\_\_ atoms.
5. Lipids are said to be \_\_a\_\_ in water and therefore are \_\_b\_\_. They can be classified as \_\_c\_\_, \_\_d\_\_, or \_\_e\_\_.
6. A triglyceride is made up of \_\_a\_\_ and \_\_b\_\_ fatty acids.
7. \_\_a\_\_ fats are solid at room temperature because their tail chains have only \_\_b\_\_ bonds between carbon atoms whereas \_\_c\_\_ fats are liquid at room temperatures (often called \_\_d\_\_), their tail chains have either one double bond referred to as \_\_e\_\_ or more than one referred to as \_\_f\_\_.
8. Fats are stored in the fats cells of the body and function in \_\_\_\_\_.
9. \_\_a\_\_ are responsible for the structure and function of the cell membrane of cells and are composed of \_\_b\_\_, a \_\_c\_\_ group, and \_\_d\_\_.
10. The fatty acids are \_\_a\_\_ and the phosphate group is \_\_b\_\_ in a phospholipid. This allows the cell membrane to act as a \_\_c\_\_ while being in contact with water on both inside and outside of the cell.
11. \_\_a\_\_ and certain \_\_b\_\_ are types of lipids known as \_\_c\_\_. They are composed of \_\_d\_\_ rings of carbon.
12. Proteins are composed of carbon, hydrogen, oxygen, \_\_a\_\_, and sometimes \_\_b\_\_.
13. The monomer of proteins are referred to as \_\_\_\_\_.
14. Proteins provide \_\_a\_\_ support, \_\_b\_\_ substances and communicate signals with and between \_\_c\_\_, control cell \_\_d\_\_, and as \_\_e\_\_, accelerate chemical reactions.
15. Proteins help make up \_\_a\_\_, \_\_b\_\_, and \_\_c\_\_ in the body.
16. Amino acids contain a central \_\_a\_\_ which forms 4 bonds. One is formed with a \_\_b\_\_ atom, one with an \_\_c\_\_ group, a \_\_d\_\_ group, and the last is a \_\_e\_\_ group. The only one that changes is the variable group (there are \_\_f\_\_ and therefore there are \_\_g\_\_ different amino acids)
17. When amino acids bond together they form special covalent bonds called \_\_a\_\_ bonds. When two amino acids bond they are referred to as a \_\_b\_\_.
18. When three or more amino acids form they are referred to as \_\_a\_\_. Remember they form through a reaction called \_\_b\_\_ and are broken down through a reaction called \_\_c\_\_.
19. Proteins can have up to \_\_a\_\_ levels of structure. The \_\_b\_\_ and \_\_c \_\_ in which the amino acids are joined define the protein’s primary structure.
20. A protein’s secondary structure occurs after an amino acid chain is formed and it folds in to a unique \_\_a\_\_ shape, such as a \_\_b\_\_ or a \_\_c\_\_.
21. A proteins \_\_a\_\_ structure is globular but some have long fibers. Some proteins form a fourth level know as \_\_b\_\_ by combining with other proteins.
22. \_\_a\_\_ are composed of carbon, hydrogen, oxygen, nitrogen, and \_\_b\_\_. There monomer is referred to as a \_\_c\_\_.
23. The two main types of nucleic acids are \_\_a\_\_ and \_\_b\_\_; their function is to store and transmit \_\_c\_\_ information.
24. A nucleotide is composed of a \_\_a\_\_ group, \_\_b\_\_ base, and a \_\_c\_\_. The phosphate of one bonds to the \_\_d\_\_ of another which has a based attached to it.

**Dehydration**

During dehydration two \_\_a\_\_ are linked together when one loses a \_\_b\_\_ ion and another loses a \_\_c\_\_ ion. The one that loses the \_\_d\_\_ ion now has a carbon that only forms \_\_e\_\_ bonds. The other that loses a \_\_f\_\_ now has an oxygen atom that only forms \_\_g\_\_ bond. Therefore, the \_\_h\_\_ of one bonds to the \_\_i\_\_ of the other. During this process a \_\_j\_\_ molecule is released.

**Hydrolysis**

During hydrolysis \_\_a\_\_ are broken down into monomers. This process requires a \_\_b\_\_ molecule to break the bond between the \_\_c\_\_ of one monomer and the \_\_d\_\_ of the other monomer.