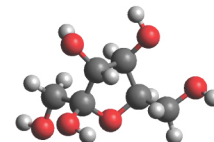


Name : _____ Date : _____

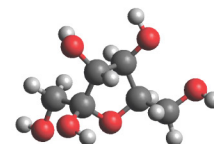
Macromolecules Worksheet



- Fill in the missing numbers.
 - If carbon has _____ valence electrons, then it can form _____ bond(s).
 - If hydrogen has _____ valence electrons, then it can form _____ bond(s).
 - If oxygen has _____ valence electrons, then it can form _____ bond(s).
 - If nitrogen has _____ valence electrons, then it can form _____ bond(s).
- All organic substances contain _____
- What three elements comprise carbohydrates?
 - _____
 - _____
 - _____
- (Circle one) Lipids are polar or nonpolar
- (Circle one) Lipids are or are not soluble in water
- (Circle one) Sugars tend to end in -ase or -ose
- What are the two types of sugar found in nucleic acids?
 - DNA sugar _____
 - RNA sugar _____
- What kind of bond holds water molecules and DNA strands? _____
- Explain how polymers are related to monomers.
- What is the relationship between glucose, fructose, and galactose?
- What are the structural differences between saturated and unsaturated fat?
- What is the difference between monosaccharide, disaccharide, and polysaccharide?

Name : _____ Date : _____

Macromolecules Worksheet



1. **Answers**

(a) If carbon has 4 valence electrons, then it can form 4 bond(s).

(b) If hydrogen has 1 valence electrons, then it can form 1 bond(s).

(c) If oxygen has 1 valence electrons, then it can form 1 bond(s).

(d) If nitrogen has 5 valence electrons, then it can form 3 bond(s).

2. All organic substances contain carbon

3. What three elements comprise carbohydrates?

(a) carbon (b) Hydrogen (c) Oxygen

4. (Circle one) Lipids are polar or nonpolar

5. (Circle one) Lipids are or are not soluble in water

6. (Circle one) Sugars tend to end in -ase or -ose

7. What are the two types of sugar found in nucleic acids?

(a) DNA sugar Deoxyribose (b) RNA sugar Ribose

8. What kind of bond holds water molecules and DNA strands? Hydrogen bond

9. Explain how polymers are related to monomers.

Polymers are comprised of monomers.

10. What is the relationship between glucose, fructose, and galactose?

They are isomers of one another. They have the same chemical formula but differ in how those elements are bonded within the molecule.

11. What are the structural differences between saturated and unsaturated fat?

Saturated fats have no carbon-to-carbon double bonds, so they are solid at room temperature. Unsaturated fats have at least one double bond and are liquid at room temperature.

12. What is the difference between monosaccharide, disaccharide, and polysaccharide?

Monosaccharides are composed of a single molecule or subunit. The disaccharides are composed of two monosaccharides linked together, and polysaccharides are composed of 3 or more monosaccharides linked together.