

Eric lab 2

[Science](#), [Genetics](#)



Eric Lab 2 Questions

1. Monosaccharides and polysaccharides are two classes of Carbohydrates
2. Long chains of amino acids make up Proteins_ and contain the atom _Nitrogen which is unique to this macromolecule.
3. Fats like triacylglycerols are the macromolecule ___lipids____.
4. You just reviewed type of carbohydrates. Glucose is a simple sugar called a monosaccharide , whereas starch contains compound carbon chains and is a polysaccharide .
5. Polysaccharides are formed by a dehydration synthesis reaction between monosaccharides. What does this mean? Water molecules are removed from the bond.
6. For each of the following tests, please circle which substance would give a positive result:
 - a. Benedict's test
 - glucose tap water oil (lipid)) starch protein
 - b. Starch test
 - glucose tap water oil (lipid)) starch protein
 - c. Sudan IV test
 - glucose tap water oil (lipid)) starch protein
 - d. Biuret test
 - glucose tap water oil (lipid)) starch protein
7. All proteins contain carbon, hydrogen, oxygen and what other element? Nitrogen
8. When one glycerol molecule covalently bonds via dehydration synthesis with three fatty acid molecules the resulting macromolecule is called a ___lipid____.
9. What are the two general categories of carbohydrates? Starch and cellulose
10. ID the test: Sudan IV, Benedict's, Biuret, Starch
11. The cloudy, orange color that shows a positive result for the __Benedict's__ test is due to simple sugars reducing cupric ions to cuprous ions which oxidize to form copper oxide.
12. If a solution contains macromolecules that test positive for the Biuret test, light refracts from copper-containing rings to produce a violet color.
13. The reagent used in the _Sudan IV__ test is soluble in lipid, but not in water. Adding ethanol to test solutions is necessary. Uses

of Macromolecules 13. Explain the difference between lipids and carbohydrates with respect to energy use and storage. Lipids store energy as "backup energy" to be used when the carbohydrates are all burnt up. Carbohydrates are less complex and therefore easier to break down than lipids. The body stores lipids as fat cells while carbohydrates are stored as sugars.

14. Fully describe at least five uses of proteins in the body. -Motion of cells depends on proteins -They catalyze reactions in cells -Transportation of material in body fluids is dependent on protein. -They form receptors for sending signals throughout the body. -Proteins are stored in muscle tissues

15. Fully describe the differences between DNA and RNA. RNA is responsible for transporting genetic code from the nucleus to the ribosomes. DNA stores the genetic code so it does not travel and therefore can be safe in the nucleus. DNA contains the genetic instructions while RNA transports the proteins needed to create the genetic instructions. Without RNA there would not be any DNA.