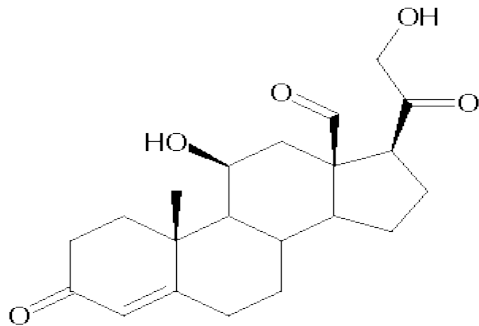


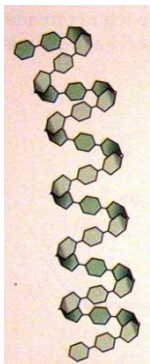
MACROMOLECULES PRACTICE TEST MULTIPLE CHOICE

1. The molecule below is a



- a. carbohydrate
- b. lipid
- c. steroid
- d. A and C
- e. B and C

2. The molecule below is a polymer of glucose monomers. The molecule below is



- a. Cellulose
- b. Starch
- c. Maltose
- d. Glycogen
- e. Chitin

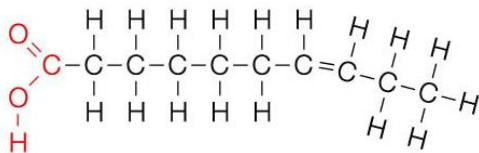
3. You are walking down the "tough streets" of New Jersey, and suddenly you feel the need to run away from someone who is accosting you! Your **muscles** keep a form of **energy stored** just for these emergencies. What **macromolecule stores energy** in the **muscles**?

- a. Glucose
- b. Galactose
- c. Starch
- d. Glycogen
- e. Chitin

4. _____ gives rigidity to the cell membrane.

- a. A triglyceride
- b. A Phospholipid
- c. Wax
- d. Cholesterol
- e. Cellulose

5. The molecule below is...



- a. a saturated fatty acid
- b. a saturated triglyceride
- c. an unsaturated fatty acid
- d. an unsaturated triglyceride
- e. an unsaturated wax

6. Table sugar is

- a. Galactose
- b. Glucose
- c. Fructose
- d. Lactose
- e. Sucrose

7. A disaccharide is formed when two monosaccharides are joined together by

- a. a synthesis reaction
- b. a hydrolytic reaction
- c. a hydrolysis reaction
- d. A and B
- e. B and C

8. The main source of energy for cells is

- a. Sucrose
- b. Glucose
- c. Fructose
- d. Galactose
- e. Maltose

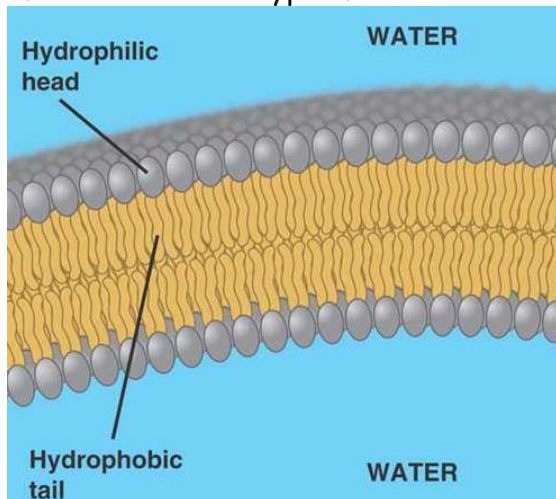
9. Mr. Jolly has just been to his doctor to discuss the results of his recent physical. His doctor told him that his **blood "bad" triglycerides and cholesterol are too high** and that he is beginning to **develop heart disease**. Since he has not completely developed heart disease, there is still time for Mr. Jolly to change his diet and lifestyle so that he does not develop heart disease. Given his new health news, what would be the best dinner for Mr. Jolly to eat tonight?
- Steak, potatoes, veggies, water and chocolate cake
 - A cheeseburger, French fries, and chocolate ice cream sundae
 - Pizza and donuts
 - Whole wheat pasta tossed in olive oil with veggies and tofu
 - Whole wheat pasta in a butter cream sauce with veggies and tofu
10. Mr. Jolly had put himself at risk for heart disease due to his previous eating habits. Which of the following most likely describes the eating habits that led to Mr. Jolly's high risk of heart disease?
- A diet with many saturated triglycerides and animal derived foods.
 - A diet with many unsaturated triglycerides and plant derived foods.
 - A diet with many complex carbs and plant derived foods.
 - A diet with many simple carbs and plant derived foods.
11. Potatoes have a large amount of
- Cellulose
 - Glycogen
 - Triglyceride
 - Wax
 - Starch
12. Lard is **pig fat**. People often use it in making pastries because its **solid** form at room temperature makes it ideal for flaky pastries and pie crusts. Lard is a(n)...
- Unsaturated triglyceride
 - Saturated triglyceride
 - Wax
 - Unsaturated fatty acid
 - Steroid
13. During photosynthesis, plants capture sunlight energy to make glucose. Then they are able to **store** that glucose energy as what macromolecule?
- Starch
 - Cellulose
 - Chitin
 - Sucrose
 - Glycogen

14. Which food below, when consumed in excess over time, would be most likely to cause heart disease?
- Oatmeal
 - Peanut butter
 - Butter
 - Sugar cane
 - Celery
15. A plant living in a dry area will likely have a substance that helps to minimize water loss from the leaves. What is that substance?
- Wax
 - Triglyceride
 - Lipid
 - Cuticle
 - A, C, and D
16. If you have consistent issues with bowel constipation, which of the following should you increase in your diet?
- Cellulose
 - Chitin
 - Phospholipid
 - Starch
 - Glycogen
17. The image below shows a build-up of plaque on the inside of an artery wall. Which of the following dietary macromolecules is most likely the cause of this type of plaque build-up?



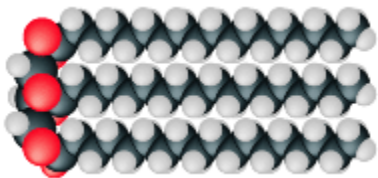
- Unsaturated phospholipid
- Saturated phospholipid
- Saturated triglyceride
- Unsaturated triglyceride
- Ear Wax

18. The macromolecules depicted in the image below make up a wall that surrounds the outside of all cells. What type of macromolecule is pictured below?



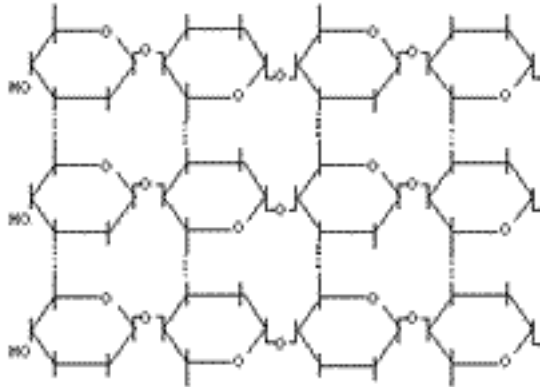
- a. Triglycerides
 - b. Waxes
 - c. Steroids
 - d. Phospholipids
 - e. Starches
19. Which of the following is for **LONG TERM energy storage** in both plants and animals?
- a. Glycogen
 - b. Starch
 - c. Triglycerides
 - d. Cellulose
 - e. Chitin

20. The molecule below is a(n) _____ and is most likely to be _____ at room temperature.



- a. Unsaturated fat/ solid
- b. Saturated fat/ solid
- c. Unsaturated fat/ liquid
- d. Saturated fat/ liquid
- e. Ear wax/ solid

21. The macromolecule below, which consists of **chains of glucose stacked on top of one another**, is called...



- a. Dietary fiber
 - b. Chitin
 - c. Cellulose
 - d. A and B
 - e. A and C
22. A **LIPID** molecule that **transmits messages** around an organism's body is most likely...
- a. A triglyceride
 - b. A wax
 - c. A steroid
 - d. A phospholipid
 - e. A cuticle
23. The information macromolecule that **STORES** information about how to run the cell is called...
- a. Chitin
 - b. Cellulose
 - c. DNA
 - d. RNA
 - e. Nucleus
24. Proteins are made up of chains of
- a. Monosaccharides
 - b. Nucleotides
 - c. Amino acids
 - d. Fatty acids
 - e. Steroids

25. How many different amino acids are there?
- 1
 - 10
 - 20
 - hundreds
 - millions
26. A change in pH is able to cause protein denaturation because
- The amino group is sensitive to OH-
 - The molecules start moving so rapidly that they come apart
 - Sasha said so and all the world believes him.
 - It causes the areas that were hydrophobic to become hydrophilic
 - The primary structure changes when the [H+] changes
27. Amino acids are linked together via what type of bond?
- Hydrogen bond
 - Polar bond
 - Peptide bond
 - Synthetic bond
 - Hydrolytic bond
28. What type of reaction links monomers together to form polymers?
- Hydrolysis
 - Synthesis
 - Digestion
 - Exothermic
 - Exergonic
29. Which of the following is NOT an organic compound?
- $C_6H_{12}O_6$
 - H_2O
 - CH_4
 - $C_2H_4O_2$
 - All of the above are organic compounds
30. Which of the following represents the correct ranking of terms from smallest to largest?
- Macromolecule → polymer → monomer → carbon atom
 - Polymer → monomer → macromolecule → carbon atom
 - Carbon atom → macromolecule → polymer → monomer
 - Monomer → carbon atom → macromolecule → polymer
 - Carbon atom → monomer → polymer → macromolecule

Use the information below to answer the following multiple choice questions.

You are a scientist at a prestigious university. You are studying the effects of various temperatures on the function of a particular fictitious cellular protein, "toxeliminator." The function of the protein in the cell is to break apart and eliminate toxins that invade the cell.

The following chart depicts your experimental set-up.

Test Tube	Test Tube temperatures °C	Contents of the test tube
A	Normal cell temp (35°)	2 ml toxin 2 ml toxeliminator protein
B	55 °	2 ml toxin 2 ml toxeliminator protein
C	75 °	2 ml toxin 2 ml toxeliminator protein
D	95 °	2 ml toxin 2 ml toxeliminator protein

For your data, you measure the amount of toxin still left in each test tube 10 minutes after you have mixed the test tube ingredients. You have written down your results, but you have been a sloppy scientist! You mixed up the tubes and now you don't know which measurement goes with which tube!! The following is your data.

Amount of toxin left in the tube (mL)
0.1
1.3
1.8
2.0

31. Which piece of data most likely corresponds to tube D?
- a. 0.1
 - b. 1.3
 - c. 1.8
 - d. 2.0
 - e. None of the data would correspond with tube D
32. Which piece of data most likely corresponds with tube A?
- a. 0.1
 - b. 1.3
 - c. 1.8
 - d. 2.0
 - e. None of the data would correspond with tube A