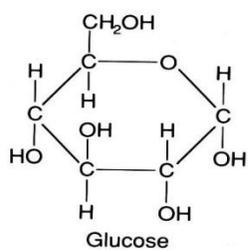


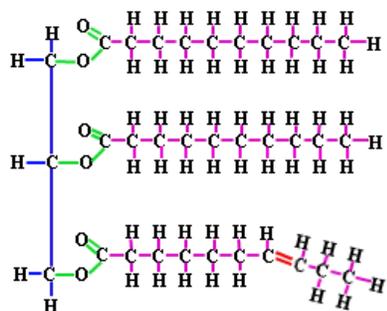
Please match the name of each molecule to the three diagrams below.

- a. Amino acid
- b. Monosaccharide
- c. Lipid
- d. Nucleotide

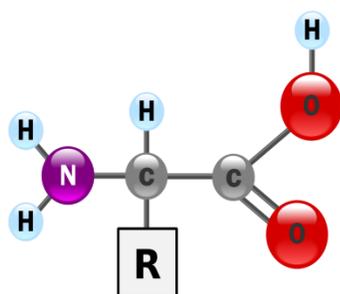
1. ***



2. ***



3. ***



4. ** You are $\frac{3}{4}$ of the way through running your first marathon. Your energy reserves are running low. At the next aid station, you are offered several drink options containing various substances. Which one is the best for INSTANT energy?
 - a. lipid solution
 - b. monosaccharide solution
 - c. polysaccharide solution
 - d. protein solution

5. **A woman is sent to the hospital for some blood work and other tests. The results indicate that she has some almost completely blocked arteries. What advice should you offer to her about her future diet?
 - a. Try to get more monosaccharides into your diet.
 - b. Try to eat a lot more saturated fats and cut down on those nasty unsaturated fats.
 - c. Avoid the polysaccharides and try to eat mostly disaccharides.
 - d. Eat a higher ratio of unsaturated fats to saturated fats; too much saturated fat is bad for you.

Use the following table to answer the next two questions.

| Cereal | Saturated Fat (g.) | Total carbohydrates (g.) | Sugars (g.) | Total Fat (g) | Protein (g) |
|----------------|---------------------------|---------------------------------|--------------------|----------------------|--------------------|
| Oat Bloaties | 4 | 37 | 30 | 6 | 1 |
| Sweet Wheats | 1 | 43 | 9 | 3 | 7 |
| Surge Splurge | 1 | 24 | 13 | 3 | 2 |
| Sugar Slimmies | 0 | 26 | 12 | 0 | 1 |

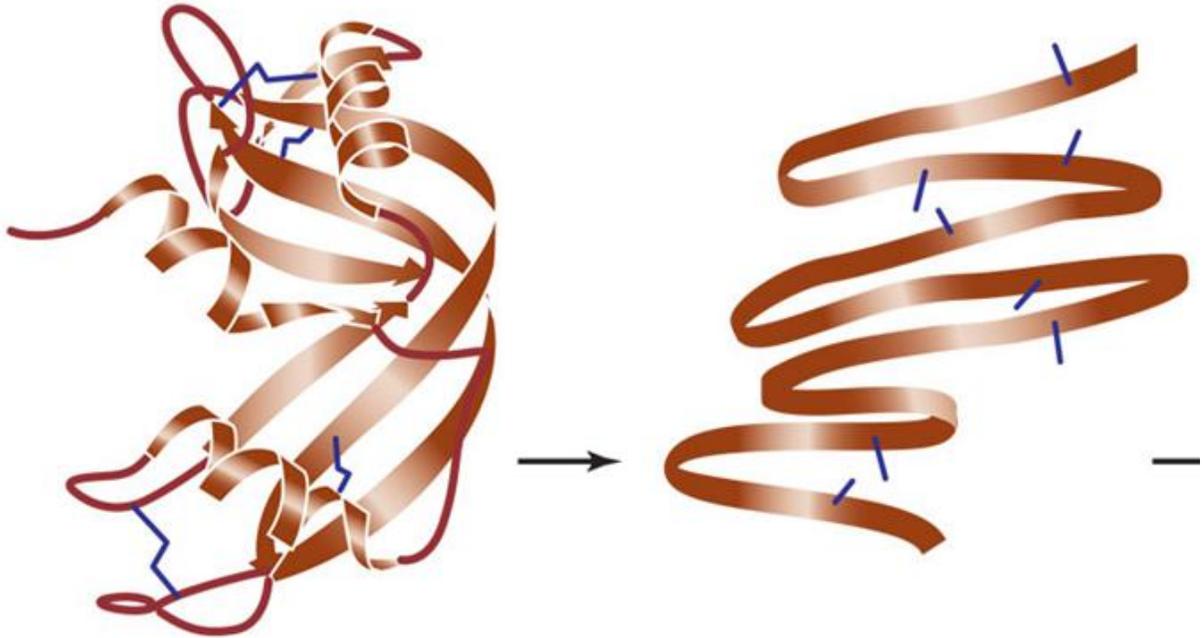
6. **If your main dietary need were amino acids, which cereal above would be best for you?
 - a. Oat Bloaties
 - b. Sweet Wheats
 - c. Surge Splurge
 - d. Sugar Slimmies

7. **If your doctor told you to reduce your lipid intake, which cereal should you eat?
 - a. Oat Bloaties
 - b. Sweet Wheats
 - c. Surge Splurge
 - d. Sugar Slimmies

8. ** Diamond-Blackfan anemia is a disease in humans that affects the bone marrow's ability to produce fully functioning red blood cells. Specifically, this is an issue in the activity/shape of the proteins that are being produced. This disease might be caused by which of the following organelles malfunctioning?
- Mitochondria
 - Ribosome
 - Lysosome
 - Golgi body
 - Chloroplast
9. ***Tay-Sachs is a genetic disease in which an individual has deficiencies in enzymes designed to break down a waste substance that destroys the neurons of the nervous system. Which of the following below best explains why the cells are unable to make these enzymes?
- The rough ER is unable to build and fold an enzyme that works.
 - The individual is not chewing their food well enough to provide the body with enough amino acids to build the body's proteins and enzymes.
 - The Golgi body is unable to make the enzymes.
 - The central vacuole is unable to hold all of the waste products produced by the enzymes in the lysosome.

SHORT ANSWER QUESTIONS

Questions 10-11 Use the following diagram to answer the next two questions.



10. ***Short answer: Name one external factor that would cause the enzyme on the left to lose its shape and turn into the molecule on the right.
11. *** Which of the following accurately describes the new function of the molecule on the right:
- The new molecule would have the same function as the molecule on the left.
 - The new molecule would be faster at doing the job of the enzyme on the left.
 - The new molecule would be unable to do the job of the enzyme on the left.
 - The new molecule and the old molecule are both unable to do any work.
12. *** (1 pt.) A box of Jell-O gelatin dessert contains a note on the directions: you cannot use fresh pineapple in your Jell-O, otherwise it will not set (gel, solidify) properly. However, if you use cooked pineapple, the Jell-O will set just fine. Using what you know about enzymes, explain **why** you can use cooked, but not fresh, pineapple in your Jell-O: