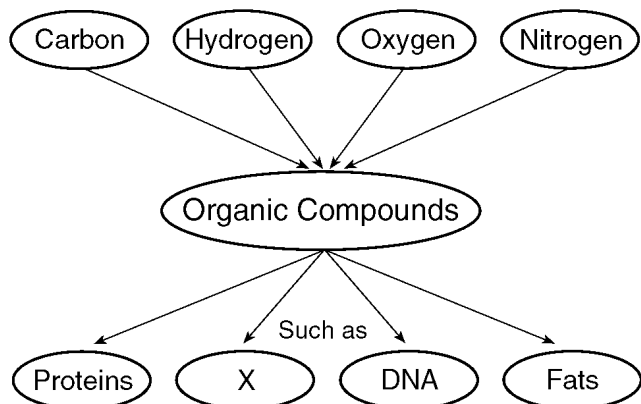
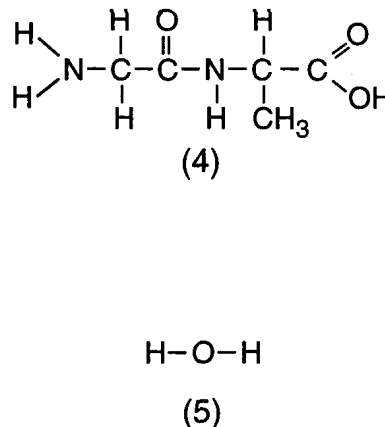
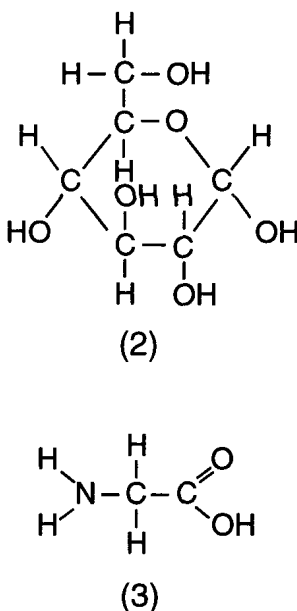
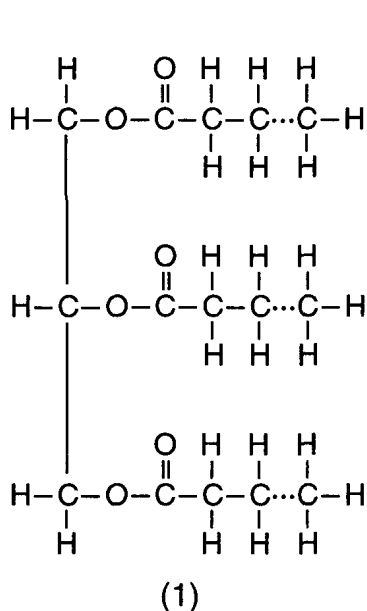


1. What substance could be represented by the letter *X* in the diagram below?



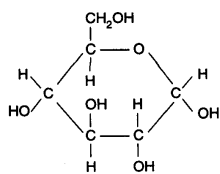
- A) **carbohydrates**      B) ozone  
C) carbon dioxide      D) water
2. Base your answer to the following question on the diagram below. For each of the following phrases, select the molecule, chosen from those shown below, which is best described by that phrase.



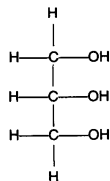
An example of a carbohydrate

- A) 1      B) 2      C) 3      D) 4      E) 5

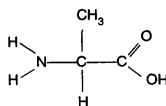
3. Some structural formulas of organic molecules are shown below.



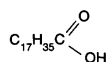
(1)



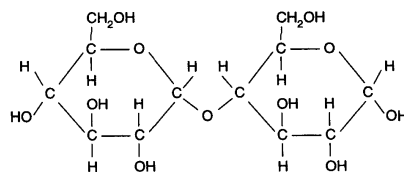
(2)



(3)



(4)



(5)

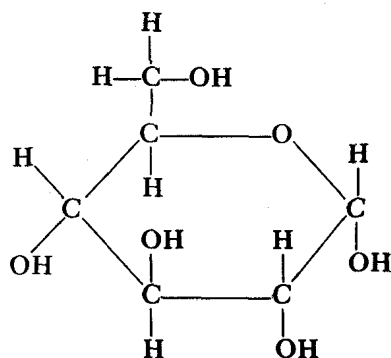
Which structural formulas represent carbohydrate molecules?

- A) 1 and 5                      B) 2 and 4  
C) 3 and 2                      D) 4 and 3

4. Which compound is a polysaccharide?

- A) glucose                      B) maltase  
C) ribose                        D) **starch**

Base your answers to questions 5 and 6 on the structural formula below and on your knowledge of biology.



5. The structural formula represents a molecule of

- A) **glucose**                      B) glycerol  
C) maltose                        D) alanine

6. Which high-molecular-weight substances are made up of repeating units of these molecules?

- A) **starch and cellulose**  
B) hemoglobin and protease  
C) fats and oils  
D) polypeptides and nucleic acids

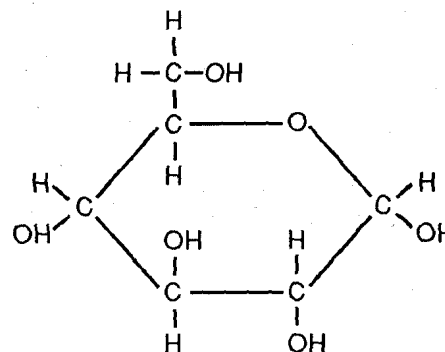
7. Which group of organic molecules includes glycogen and glucose?

- A) **carbohydrates**            B) lipids  
C) nucleic acids                D) proteins

8. Two examples of carbohydrates are

- A) fatty acids and glycerol  
B) fats and waxes  
C) **sugars and starches**  
D) amino acids and alcohol

9. Two molecules of the type illustrated below are combined by dehydration synthesis.



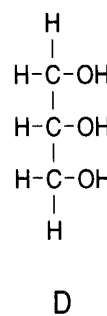
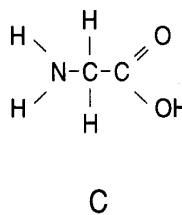
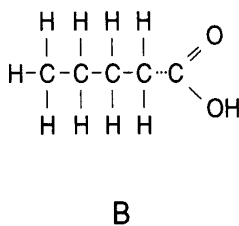
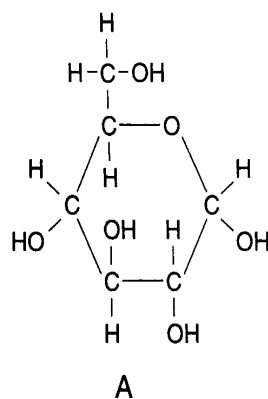
Combining these two molecules produces

- A) a protein                      B) a lipid  
C) **maltose**                      D) starch

10. Plants store carbohydrates in the form of

- A) amino acids                  B) fatty acids  
C) **starch**                        D) nucleic acids

11. The diagrams below represent four different molecules.



Which two diagrams represent the building blocks of lipids?

- A) *A* and *B*      **B) *B* and *D***      C) *C* and *D*      D) *A* and *C*

12. Animals commonly store energy in the form of

- A) **fat and glycogen**  
B) waxes and oils  
C) minerals and urea  
D) water and carbon dioxide

13. In living organisms, lipids function mainly as

- A) sources of stored energy and transmitters of genetic information  
**B) sources of stored energy and components of cellular membranes**  
C) transmitters of genetic information and catalysts of chemical reactions  
D) catalysts of chemical reactions and components of cellular membranes

14. Vegetable oils, such as corn oil, belong to which general class of organic substances?

- A) **lipids**      B) proteins  
C) carbohydrates      D) salts

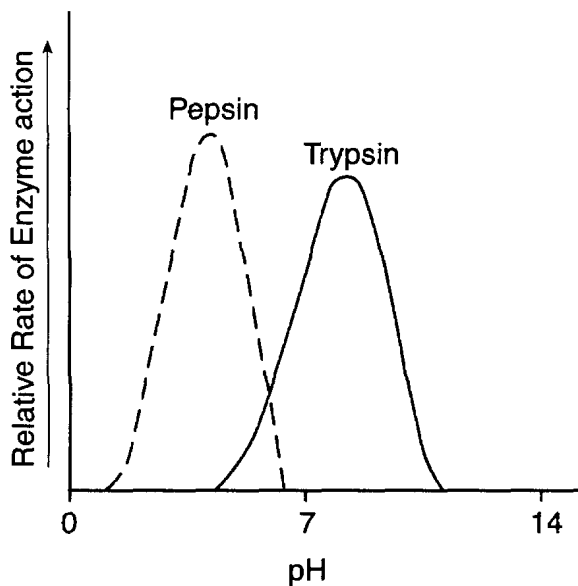
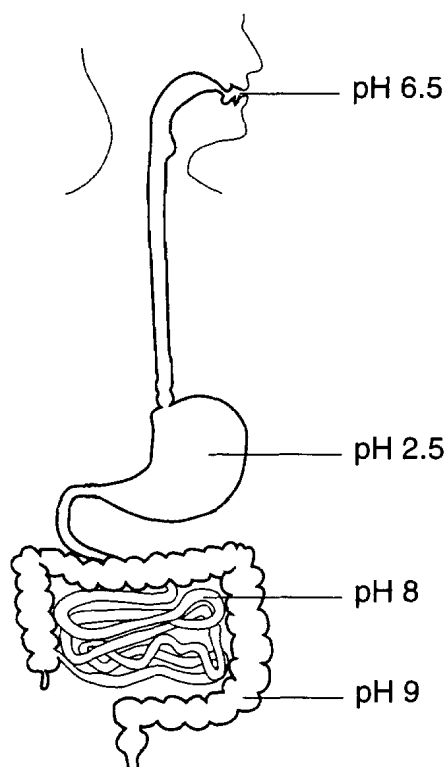
15. The function of most proteins depends primarily on the

- A) **type and order of amino acids**  
B) environment of the organism  
C) availability of starch molecules  
D) nutritional habits of the organism

16. Two proteins in the same cell perform different functions. This is because the two proteins are composed of

- A) chains folded the same way and the same sequence of simple sugars  
B) chains folded the same way and the same sequence of amino acids  
C) chains folded differently and a different sequence of simple sugars  
**D) chains folded differently and a different sequence of amino acids**

17. Base your answer to the following question on the diagram and graph below and on your knowledge of biology. The diagram represents the human digestive system. Pepsin and trypsin are human digestive enzymes.



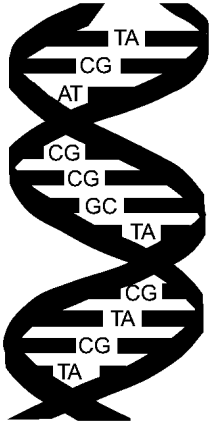
Pepsin and trypsin are classified as

- A) sugars      B) carbohydrates      C) lipids      **D) proteins**

18. All enzymes are examples of organic molecules known as

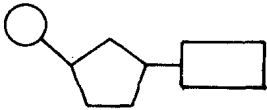
- A) proteins**      B) carbohydrates  
C) lipids      D) nucleic acids

19. The type of molecule represented below is found in organisms.



Which statement correctly describes the sequence of bases found in this type of molecule?

- A) It changes every time it replicates.
  - B) It determines the characteristics that will be inherited.**
  - C) It is exactly the same in all organisms.
  - D) It directly controls the synthesis of starch within a cell.
20. Which molecule has the shape of a double-stranded helix?
- A) RNA **B) DNA** C) ADP D) ATP
21. The diagram below represents the building block of a large molecule known as a



- A) protein
- B) fatty acid
- C) carbohydrate
- D) nucleic acid**

**Answer Key**  
**Biochem practice**

1. **A**
  2. **B**
  3. **A**
  4. **D**
  5. **A**
  6. **A**
  7. **A**
  8. **C**
  9. **C**
  10. **C**
  11. **B**
  12. **A**
  13. **B**
  14. **A**
  15. **A**
  16. **D**
  17. **D**
  18. **A**
  19. **B**
  20. **B**
  21. **D**
-