A. Refer to the following to answer questions 1-5.

A. \[
\begin{array}{cccc}
 & O & & \\
\| & C-H & \| & \\
C-H & \| & C=O & \\
H-C-OH & \| & H-C-OH & \\
H-C-OH & \| & H-C-OH & \\
H_2-C-OH & \| & CH_2OH & \\
\end{array}
\]

1. Structure “A” is an example of an:
   A. Ketotetrose  B. Aldotetrose  C. Aldopentose  D. Ketopentose

2. How many chiral carbons does structure “a” have?
   A. 1  B. 2  C. 3  D. 4

3. How many optical isomers are possible for structure “B”?
   A. 2  B. 4  C. 8  D. 16

4. Which of the structures is a L-form?

5. Structure “B” is an example of an:
   A. Ketotetrose  B. Aldotetrose  C. Aldopentose  D. Ketopentose

B. Multiple choices:

1. Which of these is needed for photosynthesis to take place?
   A. Water  B. Sunlight  C. Chlorophyll  D. All the above

2. Which monosaccharide is an Aldohexose?
   A. Fructose  B. Sucrose  C. Galactose  D. Ribose

3. The disaccharide commonly called milk sugar is _____.
   A. Lactose  B. Galactose  C. Maltose  D. Sucrose
4. Sucrose is made up of 
   A. Glucose & fructose  
   B. Glucose & galactose  
   C. Glucose & glucose  
   D. Fructose & galactose

5. Which of the following is a branched chain starch?
   A. Amylopectin  
   B. Cellulose  
   C. Amylose  
   D. Sucrose

6. The greatest percentage of natural starches is 
   A. Amylose  
   B. Amylopectin  
   C. Glycogen  
   D. Cellulose

7. The storage form of carbohydrates in animals is 
   A. Amylose  
   B. Amylopectin  
   C. Cellulose  
   D. Glycogen

8. Which of the following polysaccharides can humans not digest?
   A. Glycogen  
   B. Amylose  
   C. Starch  
   D. Cellulose

9. Which of the following is commonly called malt sugar?
   A. Galactose  
   B. Lactose  
   C. Maltose  
   D. Sucrose

10. The products of the hydrolysis of a lecithin are:
    A. Glycerol, phosphoric acid, fatty acids, and chlorine
    B. Glycerol, sphingosine, and fatty acids
    C. Glycerol, and fatty acids
    D. Glycerol, phosphoric acid, a fatty alcohol, and fatty acids

11. A lipid that cannot be hydrolyzed:
    A. Wax  
    B. Steroid  
    C. Phospholipid  
    D. Plasmalogen

12. Which of these is the most abundant in an animal fat?
    A. CH₃(CH₂)₁₄CO₂H  
    B. CH₃(CH₂)₁₆CO₂⁻Na⁺  
    C. CH₂-Ο-C(CH₂)₇CH=CH(CH₂)₇CH₃  
    D. CH₂-Ο-C(CH₂)₁₀CH₃
13. Which of these is the most abundant in vegetable oil?

A. CH₃(CH₂)₁₂CO₂H

B. CH₃(CH₂)₁₆CO₂⁻K⁺

C. CH₂-O-C(CH₂)₇CH=CH(CH₂)₇CH₃

D. CH₂-O-C(CH₂)₁₂CH₃

14. What is one of the products of the hydrolysis of the following compound?

A. CH₃(CH₂)₇CH=CH(CH₂)₇COCH₃

B. CH₃(CH₂)₁₄COH

C. HO(CH₂)₇CH=CHCH₂CH=CHCH₂CH=CHCH₂CH₃

D. All of these forms

15. A polyunsaturated triacylglycerol could be converted into a saturated triacylglycerol by:

A. Hydration     B. Hydrogenation     C. Hydrolysis     D. Hyalation

16. Animal fats react with KOH to form what mixture?

A. Glycerol and soap          B. Glycerol and fatty acids

C. Glycerol salt and fatty acids       D. Long-chain alcohol and fatty acids

17. Cephalin is:

A. Phosphatidyl glyceride  B. Phosphatidyl choline

C. Choilesteryl oleate      D. Phophatidatidylethanolamine
18. The following structural unit is present in:

   A. Steroid alcohols  
   B. Testosterone  
   C. Estradiol  
   D. All the above

19. Cholesterol is needed by the body to make:
   A. Cell membranes  
   B. Sex hormones  
   C. Bile salts  
   D. All the above

20. The fatty acid needed by the body to make prostaglandins is:
   A. Arachidonic acid  
   B. Linolenic acid  
   C. Palmitoleic acid  
   D. Stearic acid