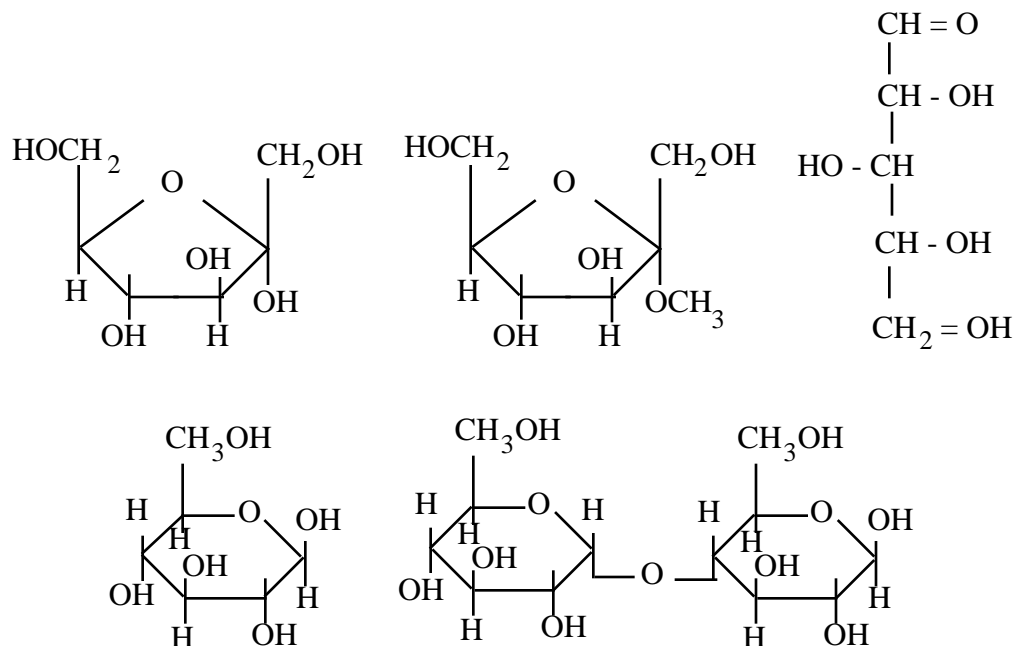


Chapter 8 Questions Carbohydrates

Book questions: 6 and 9

1) Draw the following
Fructose, Lactose, glucose β (1, 4)- glucose, Fructose 6-Phosphate

2) Which sugar is a reducing sugar?



3) Draw an a glycosidic bond

4) Describe where you would expect to see a carbohydrate with two glycosidic bonds

5) Why does cellulose form dense linear fibrils, whereas amylose forms open helices?

7) The terms reducing and non-reducing are often applied to the ends of polysaccharides. How would you describe the ratio of the reducing:nonreducing ends in glycogen and cellulose.

- Glycogen 1:1, Cellulose 1:1
- Glycogen 1:1, Cellulose many:1
- Glycogen many:1, Cellulose 1:1
- Glycogen 1:many, Cellulose 1:1
- Glycogen 1:1, Cellulose 1:many

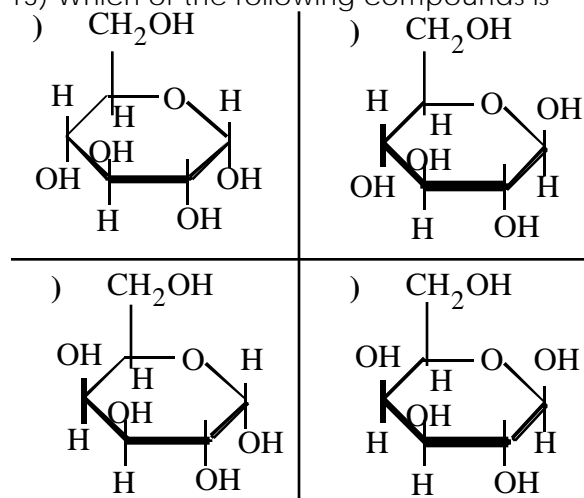
8) What is maltose?

- A disaccharide made of galactose and glucose
- A disaccharide composed of glucose
- A disaccharide composed of galactose and fructose
- a non-reducing sugar
- A monosaccharide

9) Identify the anomeric carbon of glucose.

- 10) Consider the structure of ATP. Describe the saccharide in that molecule. What kind of glycosidic bond does it have.
- 11) Which inborn metabolic disease is due to the build up of galactose?
- 12) Lactose intolerance is characterized by the inability to hydrolyze:
- 1,4 fructosidic bonds
 - β -1,6 galactosidic bonds
 - β -1,4 glycosidic bonds
 - 1,6 glycosidic bonds

13) Which of the following compounds is α -D-galactose:



- 14) Conversion of the α anomer to the β anomer is called
- rotation
 - mutation
 - epimeration
 - mutarotation
 - hydroxylase turnaroundase
- 15) The disaccharide _____ consists of galactose and glucose
- sucrose
 - fructose
 - lactose
 - maltose
 - Cellobiose

16) Glycogen and starch are extensively branched high-molecular weight polymers. Give two reasons why such a structure is advantageous for a storage molecule? fuel-

17) Draw the β anomeric Haworth structure of the following molecule:

