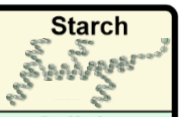
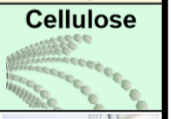
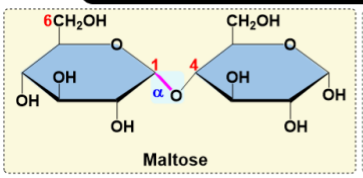
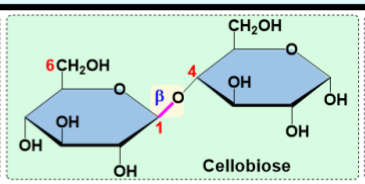
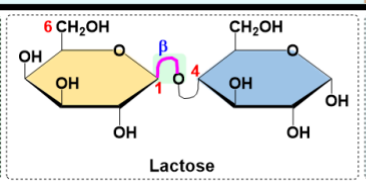
CONCEPT: DISACCHARIDES

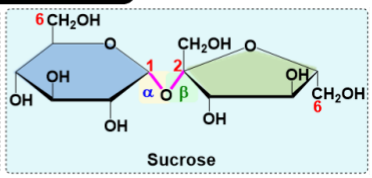
- _____: consists of _____ monosaccharides covalently linked by an O-glycosidic bond.
- Many disaccharides exist, but the most _____ ones are *maltose*, *cellobiose*, *lactose* & *sucrose*.

Sugar 1	+	Sugar 2	+	Linkage	= Disaccharide	Digestable?
D-Glucose	+	D-Glucose	+	___-1,4 Linkage	= _____ 	☐
D-Glucose	+	D-Glucose	+	___-1,4 Linkage	= _____ 	☐
D-_____	+	D-Glucose	+	___-1,4 Linkage	= _____ 	☐
D-Glucose	+	D-_____	+	__-1,__-__ Linkage	= _____ 	☐









PRACTICE: Which of the following contains galactose as one of the sugar subunits?

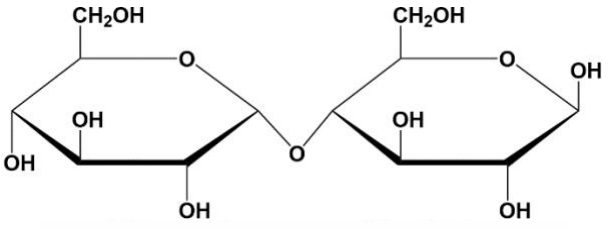
a) Glucose. b) Ribose. c) Maltose. d) Lactose. e) Cellobiose.

PRACTICE: Which disaccharide forms a 1,1-glycosidic linkage?

a) Lactose.
b) Trehalose.
c) Maltose.
d) Sucrose.

PRACTICE: What is the identity of the disaccharide below?

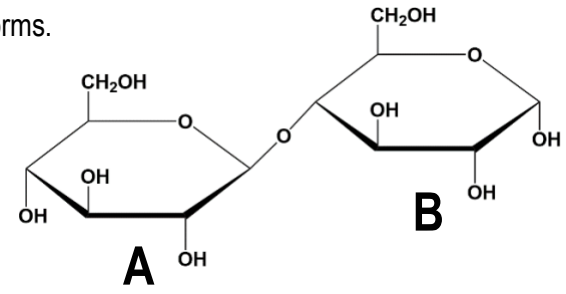
a) Cellulose.
b) Lactose.
c) Chitin.
d) Maltose.
e) Sucrose.
f) Lactose.
g) Cellobiose.
h) Glycogen.



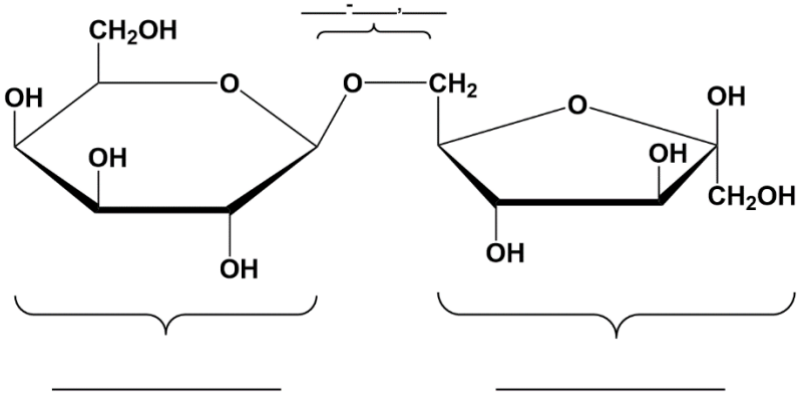
CONCEPT: DISACCHARIDES

PRACTICE: The structure of a disaccharide is shown below. Which statement applies?

a) Both sugar rings A and B are in equilibrium with their linear chain forms.
b) Only sugar ring A is in equilibrium with its linear chain form.
c) Only sugar ring B is in equilibrium with its linear chain form.
d) Neither sugar ring is in equilibrium with their linear chain form.
e) None of the above statements are correct.



PRACTICE: Name each monosaccharide unit & the glycosidic linkage in the following disaccharide (gentiobiulose).



PRACTICE: Given the following information, draw a Haworth projection for the disaccharide *gentibiose*:

1. *Gentibiose* is a dimer of glucopyranoses.
2. The glycosidic linkage is β(1 → 6).
3. The anomeric carbon not involved in the glycosidic linkage is in the α configuration.