

DISACCHARIDES – TOPIC TEST 1

QUESTION 1

Which of the following lists of compounds contains *only* disaccharides?

- A. Glucose, sucrose and fructose
- B. Cellulose, maltose and fructose
- C. Sucrose, maltose and lactose
- D. Glucose, sucrose and lactose

QUESTION 2

Disaccharides may contain the elements

- A. Oxygen, nitrogen and hydrogen only
- B. Oxygen, hydrogen and carbon
- C. Oxygen, nitrogen and carbon only
- D. Oxygen and carbon only

QUESTION 3

Glucose monomers can link to form the disaccharide

- A. Starch
- B. Maltose
- C. Cellulose
- D. Sucrose

QUESTION 4

Sucrose could be formed from two units of glucose using an

- A. ester link
- B. ether link
- C. amide link
- D. amine link

QUESTION 5

For the disaccharide sucrose to be absorbed into the human body it must first undergo

- A. Hydrogenation
- B. Polymerisation
- C. Hydrolysis
- D. Condensation

QUESTION 6

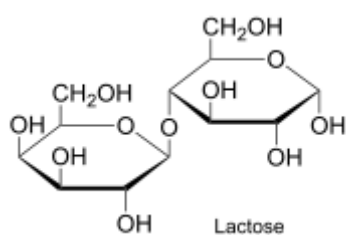
The correct formula for a disaccharide formed by the condensation of two glucose molecules would be:

- A. $C_6(H_2O)_6$
- B. $C_{12}H_{23}O_{10}$
- C. $C_{12}H_{24}O_{12}$
- D. $C_{12}H_{22}O_{11}$

QUESTION 7

Write an equation to show what happens to the disaccharide, lactose, contained in milk, when it is digested in our bodies.

Solution



QUESTION 8

The structure of the disaccharide sucrose can be found in your data booklet.

(a) Write an equation that shows the formation of sucrose. Identify the functional groups in the monosaccharides and the disaccharide.

(b) How are disaccharides similar to monosaccharides? How are they different.?

(c) What are the products of the oxidation of disaccharides?

SOLUTIONS

QUESTION 1 Answer is C

QUESTION 2 Answer is B

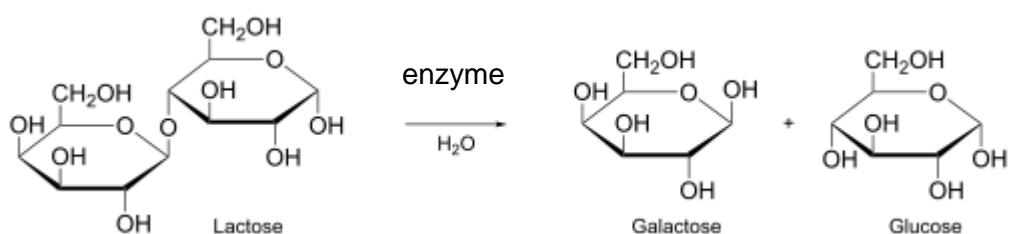
QUESTION 3 Answer is B

QUESTION 4 Answer is B

QUESTION 5 Answer is C

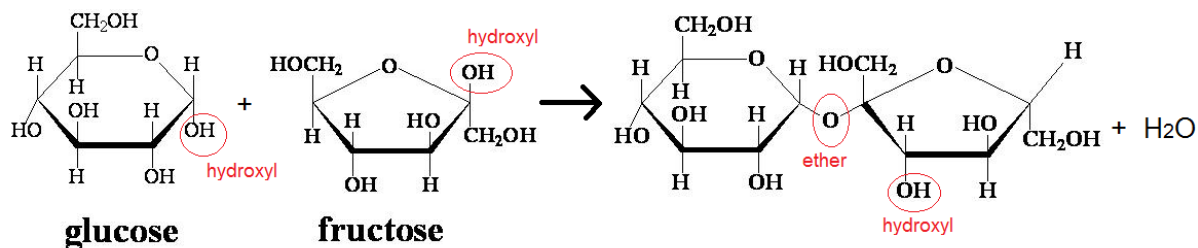
QUESTION 6 Answer is D

QUESTION 7



QUESTION 8

(a)



- (b) Both monosaccharides and disaccharides contain a number of hydroxyl functional groups. This makes them highly soluble since they are able to form hydrogen bonds with water. Both monosaccharides and disaccharides are sweet tasting and form crystalline solids. They differ in that monosaccharides are composed of only one sugar unit and only contain hydroxyl functional groups whereas disaccharides are composed of two sugar units and also have an ether functional group.
- (c) The oxidation of disaccharides will produce carbon dioxide and water.