

2017 Food Science -Carbohydrates

B Division

What is a pentose?

- a. An oligosaccharide produced in plants
- b. A monosaccharide with 5 carbon atoms
- c. A commonly used sugar free sweetener
- d. A complex carbohydrate that is required for human function

Which of the following is not true about galactose?

- a. Galactose is synthesized in the body
- b. Galactose is a monosaccharide
- c. Galactose is one of the monosaccharide that makes up the disaccharide lactose
- d. Galactose is much sweeter than glucose

Give the enzyme that is used in digestion of each of the following:

- 1. Starches - Amylase
- 2. Maltose – Maltase
- 3. Proteins - Protease
- 4. Lactose – Lactase
- 5. Sucrose - Sucrase
- 6. Lipids - Lipase

Which sugar(s) make(s) up sucrose?

Fructose and glucose

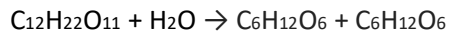
What is the chemical formula for sucrose?

C₁₂H₂₂O₁₁

Which plant is used as a common source of sucrose?

Sugar Cane OR Sugar Beet

What is the following chemical reaction an example of?



Hydrolysis

What is considered the “opposite” of the previous answer?

Dehydration

Name two monosaccharides.

Answers can include glucose, fructose, galactose, or xylose Name

one polyol.

Answers can include sorbitol or mannitol Name

a starch.

Answers can include amylose, amylopectin, or modified starches

Given an equal amount of all of the following, which contains the highest fat content?

- a. Barley
- b. Spelt

c. Sorghum

d. Oats

Name 5 cereal grains.

Answers can include barley, oats, rice, rye, spelt, teff, triticale, wheat, wild rice, maize, millet, or sorghum

What are "Ancient Grains"?

Answers will vary; must mention that ancient grains have had little selective breeding Name

4 Ancient Grains.

Answers can include spelt, Khorasan wheat (Kamut), millet, barley, teff, oats, freekeh, bulgur, sorghum, Farro, einkorn, emmer, quinoa, amaranth, buckwheat, or chia What

is the chemical formula for maltose?

$C_{12}H_{22}O_{11}$

What chemical test can be used to detect starch in a sample?

Iodine test

What color does the sample turn if starch is present?

Blue or dark purple are acceptable answers

True or False: Simple Carbohydrates raise blood glucose slower because there are easy to digest.

False

What enzyme in the mouth helps digest starches?

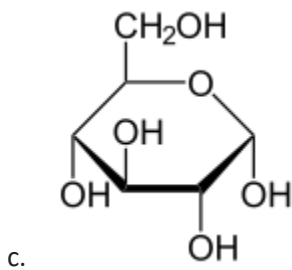
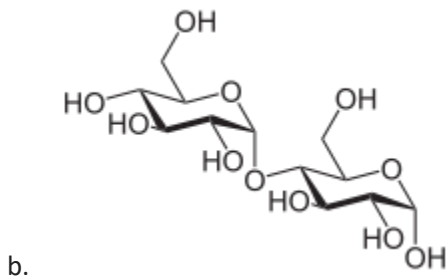
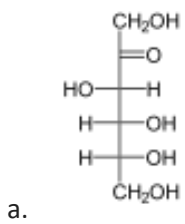
Amylase, accept 'salivary amylase' or 'ptyalin'

BONUS/TIEBREAKER

Name the sugars that make up raffinose.

Galactose, glucose, and fructose

Identify the following sugars:



A is fructose

B is maltose

C is glucose