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Exam Style Questions: Monosaccharides and Disaccharides.

Name: _____

Class: _____

Date: _____

Grade: /13

1. Lactose is a disaccharide found in milk. In the small intestine, it is digested into glucose and galactose by the enzyme lactase. Molecules of lactase are located in the plasma membranes of cells lining the small intestine.

(a) What evidence in the paragraph suggests that galactose is a monosaccharide?

_____

_____

_____

_____

(1)

2. Starch and protein are biologically important polymers.

(i) Explain what is meant by a polymer.

_____

_____

_____

_____

(1)

3. The equation shows the breakdown of lactose by the enzyme lactase.

Lactose + water $\xrightarrow{\text{Lactase.}}$ galactose + monosaccharide X

(i) Name the type of reaction catalysed by the enzyme lactase.

_____

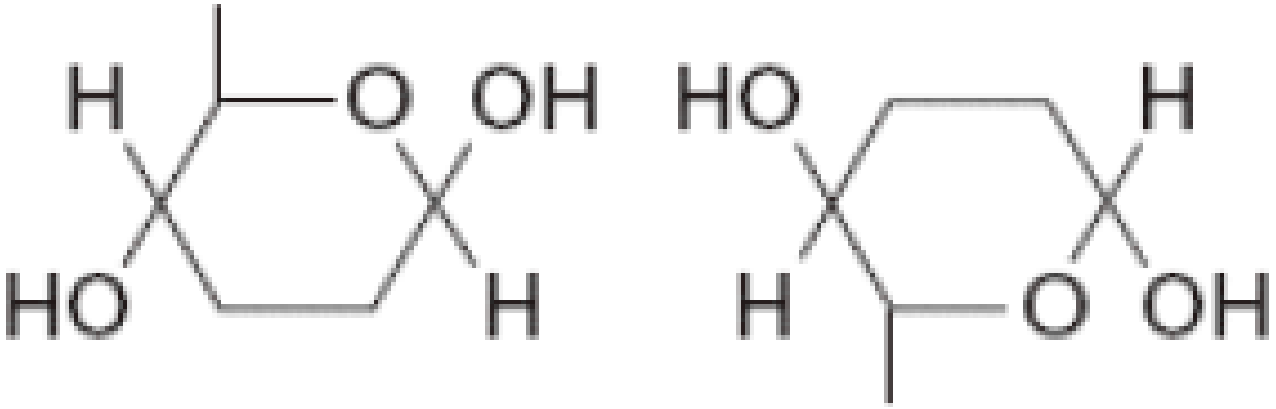
(1)

(ii) Name monosaccharide X.

_____

(1)

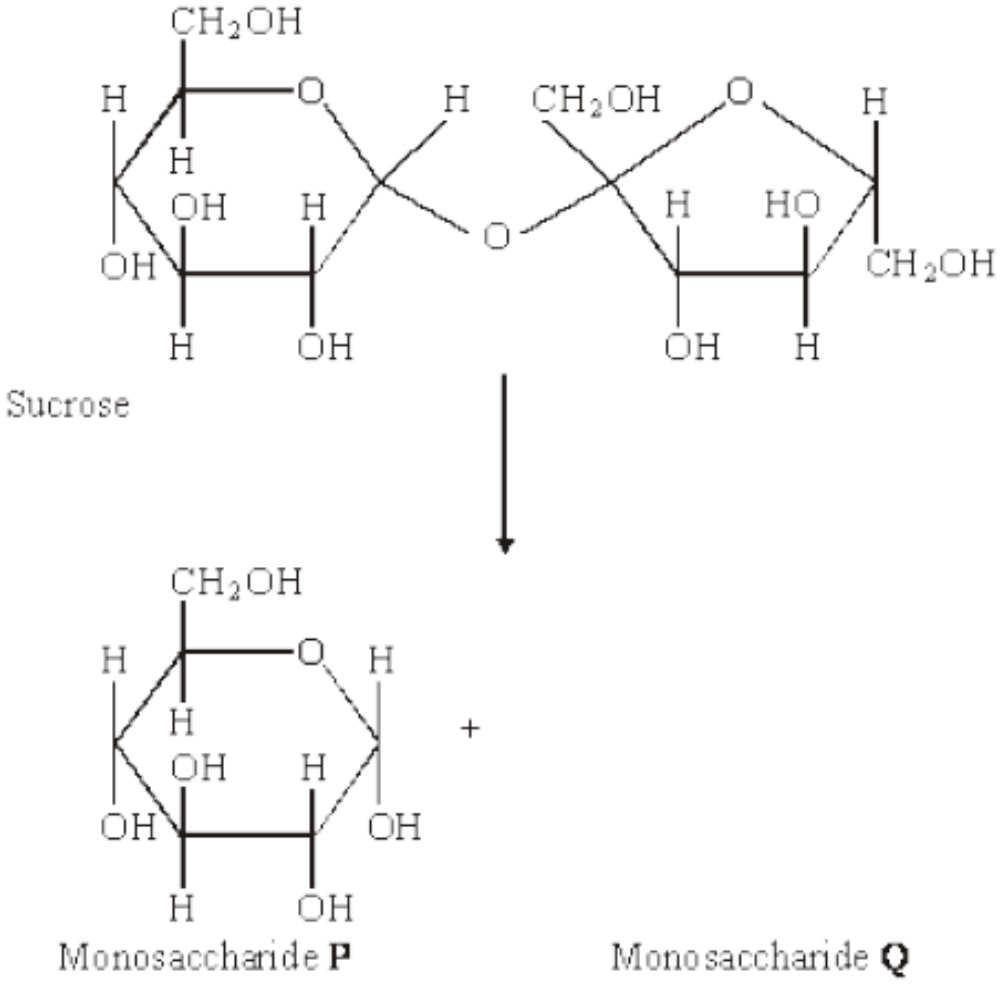
4. The diagram shows two molecules of β-glucose.



On the diagram, draw a box around the atoms that are removed when the two β-glucose molecules are joined by condensation

(2)

5. Sucrose is a disaccharide. It is formed from two monosaccharides P and Q. The diagram shows the structure of molecules of sucrose and monosaccharide P.



(a) (i) Name monosaccharide Q.

_____

(1)

(ii) Draw the structure of a molecule of monosaccharide Q in the space above.

_____

(1)

(b) The enzyme sucrase catalyses the breakdown of sucrose into monosaccharides. What type of reaction is this breakdown?

_____

(1)

6. How many oxygen atoms are there in a molecule of

(i) galactose;

_____

(1)

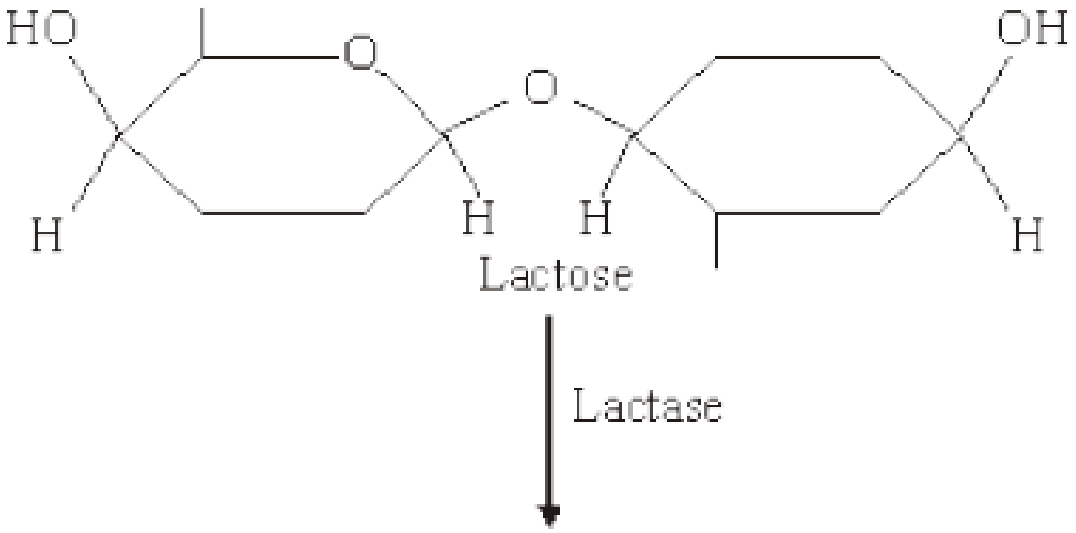
(ii) lactose?

_____

(1)

7. Lactose is a disaccharide found in milk. In the human small intestine, the enzyme lactase catalyses the hydrolysis of lactose to the monosaccharides, galactose and glucose. These monosaccharides are then absorbed into the blood. Complete the diagram to show the hydrolysis of lactose to galactose and glucose.

(2)



(Total 13 marks)