

0 2 . 1 What is a monomer?

[1 mark]

0 2 . 2 Lactulose is a disaccharide formed from one molecule of galactose and one molecule of fructose.

Other than both being disaccharides, give **one** similarity and **one** difference between the structures of lactulose and lactose.

[2 marks]

Similarity _____

Difference _____



0 2 . 3

Following digestion and absorption of food, the undigested remains are processed to form faeces in the parts of the intestine below the ileum.

The faeces of people with constipation are dry and hard. Constipation can be treated by drinking lactulose. Lactulose is soluble, but is not digested or absorbed in the human intestine.

Use your knowledge of water potential to suggest why lactulose can be used to help people suffering from constipation.

[2 marks]

0 2 . 4

Lactulose can also be used to treat people who have too high a concentration of hydrogen ions (H^+) in their blood.

The normal range for blood H^+ concentration is 3.55×10^{-8} to $4.47 \times 10^{-8} \text{ mol dm}^{-3}$

A patient was found to have a blood H^+ concentration of $2.82 \times 10^{-7} \text{ mol dm}^{-3}$

Calculate the minimum percentage decrease required to bring the patient's blood H^+ concentration into the normal range.

[2 marks]

Answer = _____

7

Turn over ►