

**Q1.**

Galacto-oligosaccharides (GOS) are polymers of galactose.

- (a) Explain why GOS are described as polysaccharides.

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**(2)**

- (b) Give **two** differences between the structures of GOS and lactose.

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**(2)**

- (c) Explain why amylase produced in the human digestive system does not digest GOS.

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**(2)**

- (d) Prebiotics are foods used to promote good health in humans.

Prebiotics stimulate the growth of 'healthy' bacterial populations in the human digestive system.

The bacteria in these 'healthy' populations produce enzymes that hydrolyse GOS.

Suggest how GOS can work as a prebiotic.

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**(3)**

**(Total 9 marks)**