

Full Higher Separate content. ★ = Higher Tier. ◆ = Separate Science only.

Q1. Explain how blood glucose is controlled after a meal.

[4 marks]

Q2. Compare Type 1 and Type 2 diabetes.

[3 marks]

★ HIGHER TIER

Q3. ★ Explain why blood glucose control is an example of negative feedback.

[2 marks]

Total: 9 marks

Q1 (4 marks)

Explain how blood glucose is controlled after a meal.

- Glucose absorbed from gut → blood glucose rises [1]
- Pancreatic beta cells detect rise → secrete insulin [1]
- Insulin → cells take up glucose; liver converts glucose to glycogen [1]
- Blood glucose returns to normal → insulin secretion falls [1]

Q2 (3 marks)

Compare Type 1 and Type 2 diabetes.

- Type 1: autoimmune, no insulin produced, requires injections [1]
- Type 2: cells resistant to insulin, managed with diet/exercise [1]
- Both: elevated blood glucose but different cause and treatment [1]

Q3 (2 marks) [★ HT]

★ *Explain why blood glucose control is an example of negative feedback.*

- Change in blood glucose triggers hormonal response (insulin/glucagon) [1]
- Response opposes the change → returns glucose to the set point [1]