

Higher Combined version — Higher Tier (★) included; Separate-only (◆) removed.

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

[4 marks]

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**Q2. Compare Type 1 and Type 2 diabetes.**

[3 marks]

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★ HIGHER TIER

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

[2 marks]

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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]