



QUESTION WORKBOOK

Hormones: a message broadcast in the blood that only some cells can read

Hormonal communication, plant responses and homeostasis · Unit B15

AQA 3.6.4.1 · OCR A 5.1.1, 5.1.4 · Edexcel A Topic 7 (homeostasis and feedback) · CAIE 14.1

6 questions · 22 marks

PRINT EDITION

SECTION A · Short, 1 to 2 marks

- A1** Name the hormone secreted by the adrenal medulla, and name the second messenger produced inside a liver cell when that hormone binds to its receptor.

[2]

SECTION B · Standard, 3 to 5 marks

- B1** Describe how adrenaline in the blood causes a liver cell to release glucose, naming the molecules involved in the order they act.

[5]

- B2** Explain why a steroid hormone such as oestrogen can act directly on the genes of its target cell while a peptide hormone such as insulin needs a second messenger.

[4]

- B3** Explain how negative feedback holds a variable such as blood glucose close to a set point, and explain why two antagonistic hormones give tighter control than one. [4]

- B4** Compare nervous coordination with hormonal coordination, writing paired statements about the route the message takes, its speed, its target and how long its effect lasts. [4]

- B5** A tumour of the anterior pituitary secretes thyroid-stimulating hormone continuously, whatever else is in the blood. Suggest why the concentration of thyroxine in this person's blood is much higher than normal, and suggest what has happened to the releasing factor secreted by their hypothalamus. [3]
