A10 · Hormones, feedback and the endocrine glands · Worked examples and practice

Name: _____ Date: _____

Worked examples

Read these first. There is one for each kind of question in this lesson.

Example 1 · Trace a negative feedback loop

An air conditioner is set to 22 °C. The room warms to 25 °C. Trace the loop.

1. Step 1: the room temperature rose.
2. Steps 2 and 3: the thermostat responds and sends a signal.
3. Step 4: the air conditioner cools the room.
4. Step 5: the room cools back to 22 °C.
5. Step 6: the thermostat switches off.

Answer: The response (cooling) is opposite to the change (warming).

Example 2 · Tell negative from positive feedback

A response makes the change that started it bigger. Which kind of feedback is it?

1. In negative feedback the response reverses the change.
2. Here the response adds to the change.

Answer: Positive feedback.

Practice

Questions 1 to 4 are easy. Questions 5 to 8 are medium. Questions 9 and 10 are harder.

EASY

1. State what a hormone is.

EASY

2. Name the cells that respond to a hormone.

EASY

3. Name the gland that sits on top of each kidney.

EASY

4. Name the part of the brain that controls the pituitary gland.

MEDIUM

5. State which system acts faster, the nervous system or the endocrine system. Say which has longer-lasting effects.

MEDIUM

6. Name the three hormones made by the anterior lobe of the pituitary gland.

MEDIUM

7. Explain why the posterior lobe of the pituitary gland is said to store hormones, not make them.

MEDIUM

8. Explain why negative feedback keeps a level steady.

HARDER

9. Hormone Y lowers the level of a substance in the blood. The level rises above normal. Use the six steps to predict what happens to hormone Y.

HARDER

10. A cell has no receptors for insulin. Insulin is in the blood around it. Predict whether the cell responds. Explain.