Hormones Endocrine

GCSE Biology · Written to the shared content for AQA, Edexcel and OCR

Name _____ Class _____ Date _____

1. Worked example

Compare nervous and hormonal communication. (3 marks)

Step 1 · Signal

Nervous: electrical impulses along neurones, whereas hormones are chemicals carried in the blood.

Step 2 · Speed

Nervous responses are very fast, whereas hormonal responses are slower.

Step 3 · Duration and target

Nervous effects are short-lived and act on a precise target, whereas hormonal effects last longer and can reach many organs.

Answer: Electrical/neurones v chemical/blood; fast v slow; short v long-lasting

Check: Use 'whereas' in a compare question.

2. Now try one with the steps

Describe the difference between type 1 and type 2 diabetes and how each is treated. (4 marks)

Step 1 · Type 1 cause

Step 2 · Type 1 treatment

Step 3 · Type 2 cause

Step 4 · Type 2 treatment

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. What is a hormone? [2]

2. Why is the pituitary gland called the 'master gland'? [1]

3. Name the hormone that lowers blood glucose. [1]

4. Name the storage carbohydrate made from excess glucose in the liver and muscles. [1]

5. Name the gland that produces each: adrenaline; thyroxine; oestrogen; testosterone. [4]

6. Explain how blood glucose returns to normal after a meal. [3]

7. Explain what causes type 2 diabetes. [2]

8. Explain why a person with type 1 diabetes needs insulin injections. [2]

9. Blood glucose fell from 9.0 to 5.4 mmol/dm^3. Calculate the percentage decrease. [2]

10. Describe the role of glucagon. [2]

11. Explain why insulin and glucagon are an example of negative feedback. [2]

12. Describe the effects of adrenaline. [3]

13. Explain how a person with type 1 diabetes should adjust their insulin before vigorous exercise. [2]

14. Explain why the hormone thyroxine affects body temperature and growth. [2]

4. Before you hand it in

Confusing glucagon and glycogen
Glucagon = HORMONE (raises glucose). Glycogen = STORAGE carbohydrate in liver and muscle.

"Insulin turns glucose into glycogen in the blood."
Insulin causes glucose to enter cells; glycogen is made inside liver and muscle cells.

"Type 2 diabetes means the pancreas makes no insulin."
In type 2, insulin is made but cells no longer respond to it.

"Hormones travel along nerves."
Hormones are secreted into the bloodstream and act on target organs.