

INKBIOLOGY FLASHCARDS

Hormonal communication, plant responses and homeostasis

Unit B15 · 22 cards · fronts and backs

Print double-sided, flipping on the long edge, and each answer lands behind its question. Cut along the card borders.

Definitions in mark-scheme wording, and the misconceptions that lose marks. These cards and each lesson's whole-lesson check run on the website with spaced-repetition scheduling, at inkphysics.co.uk/biology/flashcards.

DEFINITION

Define: Exocrine gland.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESS

DEFINITION

Define: Endocrine gland.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESS

DEFINITION

Define: Hormone.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESS

DEFINITION

Define: Target cell.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESS

DEFINITION

Define: Hypothalamus.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESS

DEFINITION

Define: Posterior pituitary.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESS

DEFINITION

Define: Anterior pituitary.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESS

DEFINITION

Define: Homeostasis.

DEFINITION

A ductless gland that secretes hormones directly into the blood.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

A gland that secretes its product into a duct, which carries it to a surface.

DEFINITION

A cell with receptors complementary to a particular hormone, and therefore the only kind of cell that responds to it.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

A chemical messenger, secreted by an endocrine gland into the blood, that acts on target cells carrying a complementary receptor.

DEFINITION

The lobe that stores and releases ADH and oxytocin, both made in the hypothalamus.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

The region of the brain that monitors the blood and controls the pituitary gland.

DEFINITION

The maintenance of a stable internal environment within narrow limits, despite changes in the external environment.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

The lobe that makes its own hormones, under the control of releasing factors from the hypothalamus.

DEFINITION

Define: Negative feedback.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

Define: Positive feedback.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

Define: Antagonistic.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

SPOT THE ERROR

Say what is wrong with this claim:

Adrenaline gets into the liver cell and switches on the enzyme that breaks glycogen down.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

Define: Glycogenesis.

BLOOD GLUCOSE: TWO HORMONES, ONE LIVER, AND TWO DIFFERENT CELLS

DEFINITION

Define: Glycogenolysis.

BLOOD GLUCOSE: TWO HORMONES, ONE LIVER, AND TWO DIFFERENT CELLS

DEFINITION

Define: Gluconeogenesis.

BLOOD GLUCOSE: TWO HORMONES, ONE LIVER, AND TWO DIFFERENT CELLS

SPOT THE ERROR

Say what is wrong with this claim:

Insulin converts glucose into glycogen.

BLOOD GLUCOSE: TWO HORMONES, ONE LIVER, AND TWO DIFFERENT CELLS

DEFINITION

A mechanism in which a deviation from the norm triggers a response that increases the deviation.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

A control mechanism in which a deviation from the norm triggers a response that reverses the deviation.

SPOT THE ERROR

Adrenaline never enters the cell. It binds a receptor on the outside of the membrane, and a second messenger made in the cytoplasm carries the instruction inwards. Every step after that is an enzyme, so one hormone molecule releases thousands of glucose molecules.

HORMONES: A MESSAGE BROADCAST IN THE BLOOD THAT ONLY SOME CELLS CAN RESPOND TO

DEFINITION

Describes two effectors or hormones whose effects on a variable are opposite.

DEFINITION

The hydrolysis of glycogen to glucose. Promoted by glucagon and by adrenaline.

BLOOD GLUCOSE: TWO HORMONES, ONE LIVER, AND TWO DIFFERENT EFFECTORS

DEFINITION

The synthesis of glycogen from glucose, in liver and muscle cells. Promoted by insulin.

SPOT THE ERROR

Insulin never touches a glucose molecule. It binds receptors on liver, muscle and fat cells and changes what they do: more glucose transporters in the membrane, the glycogen-building enzymes activated, respiration raised. Enzymes do the conversion; insulin is the signal.

BLOOD GLUCOSE: TWO HORMONES, ONE LIVER, AND TWO DIFFERENT EFFECTORS

DEFINITION

The production of glucose from non-carbohydrate sources such as amino acids and glycerol, in the liver. Promoted by glucagon.

DEFINITION

Define: Nephron.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

DEFINITION

Define: Ultrafiltration.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

DEFINITION

Define: Selective reabsorption.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

DEFINITION

Define: Osmoregulation.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

SPOT THE ERROR

Say what is wrong with this claim:

The loop of Henle reabsorbs water.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

SPOT THE ERROR

Say what is wrong with this claim:

Light destroys the auxin on the lit side of a shoot, so there is less of it there and that side grows less.

QUANT RESPONSES: TROPISMS, AUXINS AND THE CLASSIC EXPERIMENTS

DEFINITION

Filtration under pressure through a partially permeable barrier, separating small molecules from large ones.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

DEFINITION

The functional unit of the kidney: a renal capsule and its tubule, running from the cortex into the medulla and back.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

DEFINITION

The control of the water potential of the blood and body fluids.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

DEFINITION

The return of useful substances from the filtrate to the blood, by transport proteins in the tubule wall.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK

SPOT THE ERROR

The evidence supports movement, not destruction. Auxin collected in agar from the lit and shaded halves of an illuminated coleoptile totals the same as in the dark; only its distribution has changed. Insert a barrier down the middle and the asymmetry disappears.

PLANT RESPONSES: TROPISMS, AUXINS AND THE CLASSIC EXPERIMENTS

SPOT THE ERROR

The loop reabsorbs very little water. What it does is build a concentration gradient in the medulla, salty at the tip, by actively transporting sodium and chloride out of its ascending limb. The water is reabsorbed later, from the collecting duct running back down through that gradient.

THE KIDNEY: FILTER EVERYTHING, THEN TAKE ALMOST ALL OF IT BACK