Q 1 a) Identify the hormone that targets all body cells to increase cell metabolism and body heat.

b) Identify the gland which secretes this hormone.

c) Identify the nutrient required to manufacture this hormone.

d) Identify the condition that results if there is a lack of the nutrient identified in c).

Q 2 a) List three hormones that raise blood glucose levels.

b) Identify each gland that secretes these hormones

c) Identify the effect of each of these hormones upon the target

Q 1 e) Illustrate and describe the feedback mechanism used to correct low body temperature

Q 3 a) Identify two hormones which lower blood sugar

b) Identify each gland that secretes these hormones

c) Identify the effect of each of these hormones upon the target

Q 1 f) Illustrate and describe the feed back mechanism used to correct elevated body temperature.

Q 4 a) Identify the hormone that raises blood calcium levels

b) Identify the gland that secretes this hormone.

c) Identify the target(s) of this hormone and the effects upon the target.

A 2 a) glucagon, epinephrine/norepinephrine, cortisol

b) islet alpha cells of the pancreas secretes glucagon, the adrenal medulla epinephrine/norepinephrine and the adrenal cortex secretes cortisol

c)

- glucagon promotes the conversion of glycogen to glucose in the liver
- cortisol promotes the conversion of amino acids to glucose
- epinephrine/norepinephrine promotes the conversion of glycogen to glucose in the liver

A 1 a) thyroxine

b) thyroid gland

c) iodine

d) Goiter

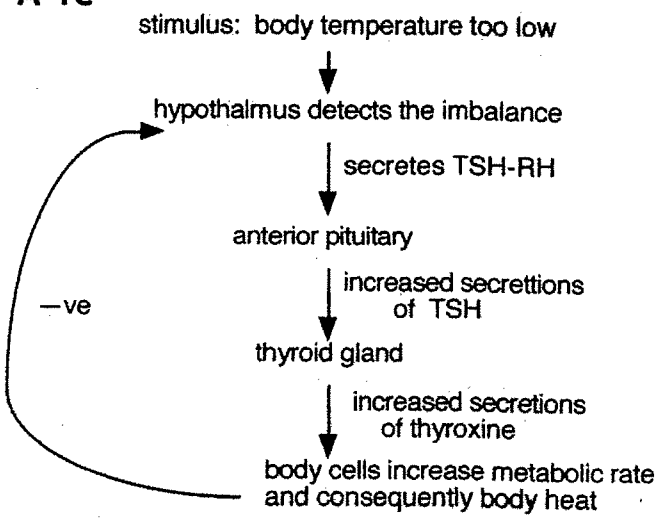
A 3 a) insulin and thyroxine

b) beta cells of the pancreas secretes insulin and the thyroid gland secretes thyroxine

c)

- insulin increases permeability of cells to glucose; increases glucose uptake
- thyroxine increases cellular metabolism and the cells' demand for glucose

A 1e



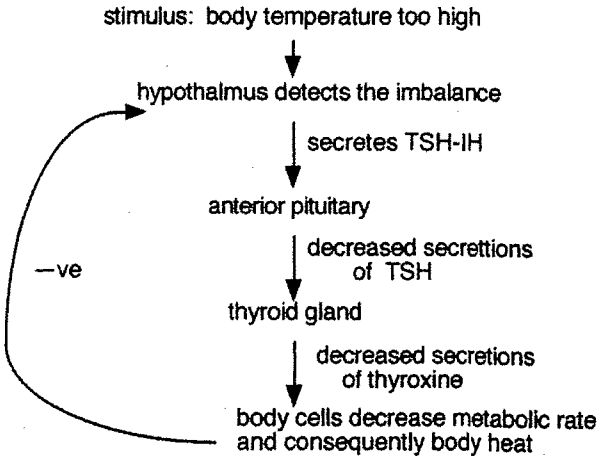
A 4 a) PTH (parathyroid hormone)

b) parathyroid gland secretes PTH

c) three targets:

- kidney is stimulated to reabsorb more calcium ion
- bones are stimulated to release calcium ion
- intestines are stimulated to absorb more calcium ion

A 1 f



Q 5 a) Identify the 6 hormones secreted by the anterior pituitary gland and the target of each of the 6 hormones.

Q 6 a) Identify the 2 hormones secreted by the posterior pituitary gland and the target of each of the 2 hormones.

Q 7 a) Identify the gland that controls the secretions of the anterior pituitary gland.

b) Identify the hormone that stops anterior pituitary secretions.

c) Identify the hormone that stimulate the anterior pituitary to secrete a hormone.

Q 8

a) Define homeostasis

b) Define an endocrine gland

c) Differentiate between positive and negative feedback.

Q 9 Define diabetes mellitus.

Q 10

a) Identify the gland that secretes growth hormone.

b) Describe the effect of growth hormone.

A 6 The 2 hormones secreted by the posterior pituitary gland and the target of each of the 2 hormones:

- oxytocin: uterus and mammary glands
- ADH: kidneys

A 5 Six hormones secreted by the anterior pituitary gland and the target of each of the six hormones:

- TSH: thyroid gland
- ACTH: adrenal cortex
- hGH: most cells, especially bones and muscle
- FSH: ovaries, testes
- LH: ovaries, testes
- PRL: mammary glands

A 8

a) Homeostasis is the body's attempt to keep all its systems operating within normal limits in a fluctuating environment

b) An endocrine gland produces chemicals (hormones)that are secreted directly into the blood.

c) Negative feedback mechanisms trigger a response that reverses the changed condition; positive feedback mechanisms move the controlled variable even farther away from a steady state.

A 7 a) hypothalamus

b) inhibiting hormone (IH)

c) releasing hormone (RH)

A 10

a) anterior pituitary

b)

- promotes protein synthesis by increasing the uptake of amino acids by cells
- causes a switch in cellular fuels from glucose to fatty acids

A 9 Daibetes Melitus: Type 1 diabetes results from beta cells unable to produce insulin. Type 2 diabetes develops when the insulin receptors on the cells do not respond properly to insulin.

Q 11

a) Identify the hormone that lowers blood calcium levels

b) Identify the gland that secretes this hormone.

c) Identify the target(s) of this hormone and the effects upon the target.

Q 12

a) Explain what is meant by hyposecretion of a hormone.

b) Explain what is meant by hypersecretion of a hormone

Q 13

a) Identify the main function of ADH

b) Identify the gland that releases ADH to the blood.

c) What are osmoreceptors?

Q 14

a) Identify the hormone that controls sodium ion homeostasis.

b) Identify the gland which secretes this hormone.

c) Where is this gland located?

Q 15

a) Identify the three hormones secreted by the adrenal cortex.

b) Identify the effect of each hormone.

Q 16

Illustrate the feedback mechanisms that controls the secretion of ADH from the hypothalamus

A 12

a) . A condition where a gland is under-secreting a hormone.

b) . A condition where a gland is over-secreting a hormone.

A 11

a) calcitonin

b) thyroid gland secretes calcitonin

c) three targets:

- kidney is stimulated to reabsorb less calcium ion
- bones are stimulated to deposit calcium ion
- intestines are stimulated to absorb less calcium ion

A 14

a) The hormone that controls sodium ion homeostasis is aldosterone

b) The gland which secretes this hormone is the adrenal cortex

c) The adrenal glands are located above each kidney. Each adrenal gland is made up of two glands encased in one shell. The outer casing is the adrenal cortex.

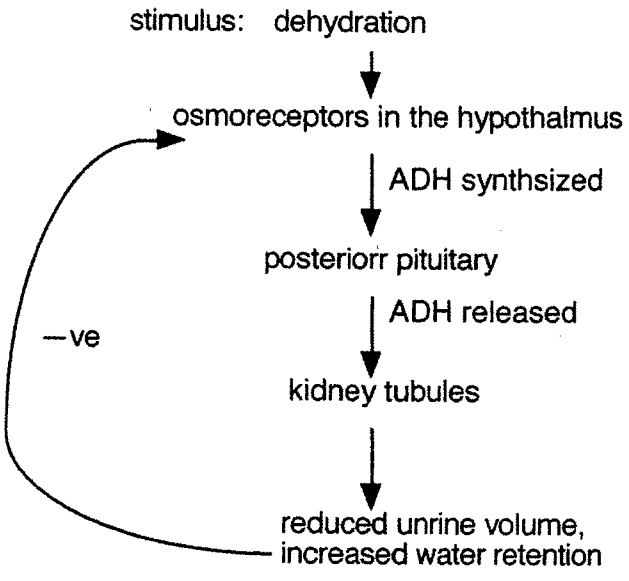
A 13

a) ADH conserves body water by reducing urine output.

b) The posterior pituitary gland releases ADH to the blood.

c) Osmoreceptors are sensory receptors in the hypothalamusthat detect changes in the osmotic pressure of the blood and surrounding extracellular fluid (ECF)

A 16



A 15

a) The three hormones secreted by the adrenal cortex are : cortisol, aldosterone and androgens.

b)

- cortisol stimulates the conversion of amino acids to glucose by the liver, increasing blood sugar
- aldosterone stimulates the kidney tubules to increase the absorption of sodium ions into the blood., water follows, increasing blood volume and then blood pressure
- androgens supplement the sex hormones produced by the ovaries and testes and promote secondary sexual characteristics

Q 17

a) Identify the two closely related hormones produced by the adrenal medulla.

b) What do these hormones regulate?

c) List 6 effects of these hormones upon the body.

Q 18

a) Identify the two hormones that make up the long-term stress response.

b) Identify the gland that produces these hormones

c) Describe the long-term stress response for each hormone .

Q 19

a) Identify the gland which controls the adrenal medulla and the adrenal cortex.

b) Explain how this gland signals the adrenal medulla.

c) Explain how this gland signals the adrenal cortex.

Q 20

Illustrate the mechanisms for aldosterone release in the long-term stress response

Q 21

a) Insulin causes blood glucose levels to increase or decrease?

b) The pancreas secretes more insulin when blood glucose increases or decreases?

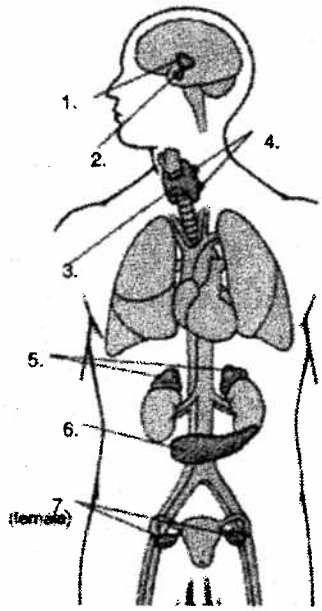
c) Insulin causes glycogen formation by the liver to increase or decrease?

d) Between meals, glucose levels tend to increase or decrease?

e) Glucagon stimulates liver cells to increase or decrease the conversion of glycogen to glucose?

f) Glucagon causes blood glucose to increase or decrease?

Q 20



A 18

a) Cortisol and Aldosterone

b) Adrenal cortex

c)

- aldosterone stimulates the kidney to absorb ions and water, and blood volume and blood pressure increases
- cortisol stimulates protein and fat metabolism, which releases glucose, increasing blood sugar
- cortisol suppresses the immune system
- cortisol reduces inflammation

A 17

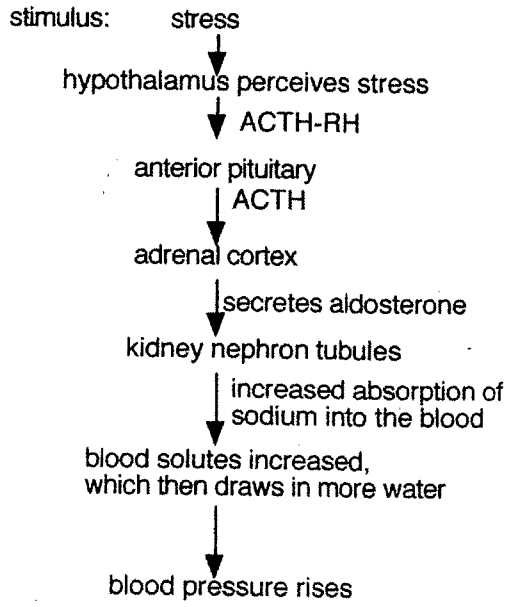
a) Epinephrine and Norepinephrine.

b) The short-term stress response that is commonly referred to as the fight-or flight response

c)

- increase in breathing rate
- increase in heart rate and blood pressure
- conversion of glycogen to glucose in the liver
- dilates pupils
- decreases blood flow to the extremities

A 20



A 19

a) Hypothalamus

b) The hypothalamus sends a nerve signal via the sympathetic nervous system to the adrenal medulla

c)

- The hypothalamus secretes ACTH-releasing hormone which stimulates the anterior pituitary to secrete ACTH.
- ACTH stimulates the adrenal cortex to release cortisol and aldosterone,

A 22

1. Hypothalamus
2. pituitary gland
3. thyroid gland
4. parathyroid glands (4 of them)
5. adrenal glands (2 of them)
6. pancreas
7. ovaries
8. testes

A 21

a) Decrease
b) Increases
c) Increase
d) Decrease
e) Increase
f) Increase