Answer Key

Directed Reading

SECTION: HORMONES

1. hormones
2. blood or bloodstream
3. Endocrine
4. Exocrine
5. protein
6. cell membrane
7. cholesterol
8. target
9. 4
10. 3
11. 5
12. 2
13. 1
14. 2
15. 5
16. 1
17. 4
18. 3
19. In negative feedback, a final step in a series inhibits the first step in the series. Thus, if the level of a hormone gets higher than a certain level, hormone production is inhibited. If the level of a hormone gets below a certain point, hormone production is increased.
20. In positive feedback, the production of a hormone causes the release of more of the same hormone. The process continues until a specific event triggers hormone production to stop.
21. Antagonistic hormones work in pairs. One antagonistic hormone counteracts the effect of the other hormone in the pair. Both are regulated by negative feedback.
22. Hyposecretion is the production of too little or none of a hormone. Hypersecretion is the production of too much of a hormone.

SECTION: MAJOR ENDOCRINE GLANDS

1. pituitary gland
2. hypothalamus
3. tropic
4. mammary glands
5. Hypersecretion
6. iodine
7. hypothyroidism
8. falling or low
9. calcium
10. insulin
11. glucagon
12. melatonin
13. drakness, light
14. stress
15. These two hormones are responsible for the body's flight-or-fight response. Epinephrine increases heart rate and blood flow to the muscles and brain. Norepinephrine increases blood pressure, which helps muscles get nutrients and oxygen.
16. Cortisol causes the body to make glucose from fats and proteins, and at high levels, suppresses the immune system.
17. Gonadotropins
18. Androgens
19. ovaries
20. adrenal cortex

Active Reading

SECTION: HORMONES

1. Amino acid-based hormones are not fat-soluble and therefore cannot pass through the cell membrane.
2. The shape of the receptor protein changes.
3. an amino acid-based hormone made in the pancreas
4. a molecule that passes a message from the first messenger, the hormone, to the inside of the cell
5. a change in the shape of a receptor protein
6. An enzyme is activated that converts ATP to a second messenger called cyclic AMP.
7. The second messenger activates or inactivates certain enzymes in an enzyme cascade.
8. b

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SECTION: MAJOR ENDOCRINE GLANDS

1. Together they serve as a major control center for the rest of the endocrine system.
2. an endocrine gland that coordinates the activities of the nervous and endocrine systems
3. hunger, thirst, and body temperature
4. It is in the brain, suspended from the hypothalamus by a short stalk.
5. growth hormone, prolactin, and four tropins
6. Tropins affect the hormone production of other glands in the body.
7. b

Vocabulary Review (Basic)

1. b
2. c
3. d
4. a
5. c
6. a
7. b
8. a
9. d
10. b
11. c

Vocabulary Review (General)

1. f
2. h
3. d
4. c
5. b
6. g
7. e
8. a
9. Epinephrine and norepinephrine are responsible for the body's fight-or-flight respsonse. They are both secreted by the adrenal medulla. Ephinephrine increases heart rate and blood flow. Norepinephrine increases blood pressure.
10. Estrogen and androgens are sex hormones that are secreted by gonads and by the adrenal cortex. Estrogen is a female sex hormone secreted by the ovaries. Androgens are male sex hormones secreted by the testes.

Science Skills

INTERPRETING GRAPHICS

1. In Situation 1, the receptors of Cell M are defective. Cell M does not secrete any Hormone B because the cell cannot be stimulated to do so. Cell D's secretion of Hormone A increases because of the lack of release of Hormone B.
2. In Situation 2, the receptors of Cell D are defective. Cell D's secretion of Hormone A is increased because it is unable to detect Hormone B secreted by Cell M. In response to the increased levels of Hormone A, Cell M's secretion of Hormone B increases.
3. If Cell D could not produce Hormone A, Cell M would not be stimulated to release Hormone B. The concentrations of both hormones would be zero.
4. Liver cells release glucose.
5. Pancreas releases insulin.
6. Blood-glucose levels decrease.

Concept Mapping

1. Endocrine glands
2. hormones
3. feedback mechanism
4. antagonistic hormones
5. pituitary gland
6. target cells
7. cell membrane
8. second messenger
9. gene

Critical Thinking

1. b
2. d
3. a
4. c
5. d
6. a
7. c
8. b
9. c
10. a
11. b
12. d, e
13. h, c
14. a, b
15. g, f
16. d
17. c
18. d
19. b

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