Section 39–2 Human Endocrine Glands (pages 1003–1008)

This section describes the functions of the major endocrine glands.

Introduction (page 1003)

1. List seven major glands of the endocrine system.

a. Pituitary gland
b. Hypothalamus
c. Thyroid gland
d. Parathyroid glands
e. Adrenal glands
f. Pancreas
g. Reproductive glands

Pituitary Gland (page 1003)

2. Describe the pituitary gland and its location. The pituitary gland is a bean-size structure that dangles on a slender stalk of tissue at the base of the skull.

3. List the two parts of the pituitary gland.

a. Anterior
b. Posterior

4. In general, what is the role of pituitary gland hormones? They directly regulate many body functions and control the actions of several other endocrine glands.

Hypothalamus (page 1004)

5. Is the following sentence true or false? The hypothalamus controls the secretions of the pituitary gland. true

6. What influences the activity of the hypothalamus? Its activity is influenced by the levels of hormones in the blood and by sensory information collected by other parts of the nervous system.

7. In what way is the posterior pituitary an extension of the hypothalamus? The cell bodies of the neurosecretory cells of the posterior pituitary are in the hypothalamus.

8. Is the following sentence true or false? The hypothalamus has direct control of the anterior pituitary. false

Match each pituitary hormone with its action.

	Hormone	Action
e	**9.** ADH	**a.** Stimulates ovaries and testes
b	**10.** FSH	**b.** Stimulates production of eggs and sperm
a	**11.** LH	**c.** Stimulates release of hormones from adrenal cortex
d	**12.** GH	**d.** Stimulates protein synthesis and growth in cells
c	**13.** ACTH	**e.** Stimulates the kidneys to reabsorb water

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14. What are releasing hormones, and what do they do? They are hormones produced by the hypothalamus and secreted directly into blood vessels. They are carried by the circulatory system to the anterior pituitary, where they control the production and release of hormones.

Thyroid Gland (page 1005)

15. Where is the thyroid gland located? It is located at the base of the neck and wraps around the upper part of the trachea.

16. Is the following sentence true or false? The thyroid gland regulates reproduction. false

17. List the two hormones produced by the thyroid.

a. Thyroxine **b.** Calcitonin

18. What does thyroxine do in the body? It regulates metabolic rates of nearly all the cells of the body.

19. Production of too much thyroxine leads to a condition called hyperthyroidism.

20. Circle the letter of each choice that is a symptom of too much thyroxine.

(**a.**) nervousness (**b.**) weight loss **c.** lack of energy **d.** goiter

21. An enlargement of the thyroid gland is called a(an) goiter.

22. Infants who lack enough iodine to produce normal amounts of thyroxine suffer from a condition called cretinism.

23. How can cretinism usually be prevented? It can usually be prevented by the addition of small amounts of iodine to table salt or other items in the food supply.

Parathyroid Glands (page 1005)

24. How does parathyroid hormone regulate calcium levels in the blood? It increases the reabsorption of calcium in the kidneys and the uptake of calcium from the digestive system.

Adrenal Glands (page 1006)

25. What is the general role of the adrenal glands? The general role is to help the body prepare for and deal with stress.

26. The outer part of the adrenal gland is called the adrenal cortex, and the inner part is called the adrenal medulla.

27. Is the following sentence true or false? The release of hormones from the adrenal medulla is regulated by the sympathetic nervous system. true

28. Complete the compare-and-contrast table.

HORMONES OF THE ADRENAL GLAND

Part of Adrenal Gland	Hormones It Produces	Role of the Hormones
Adrenal cortex	Corticosteroids	Regulating minerals, metabolism
Adrenal medulla	Epinephrine, norepinephrine	Producing "fight or flight" response

Pancreas (pages 1007–1008)

29. Is the following sentence true or false? The pancreas is both an endocrine gland and an exocrine gland. true

30. What is the role of insulin and glucagon? They help to keep the level of glucose in the blood stable.

31. When the pancreas fails to produce or properly use insulin, a condition known as diabetes mellitus occurs.

32. Is the following sentence true or false? Type I diabetes usually develops in people before the age of 15. true

33. Circle the letter of each sentence that is true about Type II diabetes.

a. It most commonly develops before age 40.

b. Type II diabetics produce low to normal amounts of insulin.

c. It is also called juvenile-onset diabetes.

d. It is an autoimmune disorder.

Reproductive Glands (page 1008)

34. List the two important functions served by the gonads.

a. Production of gametes **b.** Secretions of sex hormones

35. The female gonads are the ovaries, and the male gonads are the testes.

Reading Skill Practice

Taking notes can help you identify and remember the most important information in a section. Take notes on Section 39–2 by writing the main headings and under each heading listing the most important points. Do your work on a separate sheet of paper.

Students should list all the headings and under each heading add enough additional information to make the topic clear and informative.