Chapter 39  Endocrine and Reproductive Systems

Section 39–1  The Endocrine System  (pages 997–1002)

Key Concepts
• What is the function of the endocrine system?
• How does the endocrine system maintain homeostasis?

Introduction  (page 997)
1. What makes up the endocrine system? ________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
2. What do the products of the endocrine system do? ____________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Hormones  (page 997)
3. Chemicals released in one part of the body that travel through the bloodstream and affect the activities of cells in other parts of the body are called _____________.
4. How do hormones affect the activities of other cells? ______________________
_________________________________________________________________
_________________________________________________________________
5. Cells that have receptors for a particular hormone are referred to as _____________.
6. Is the following sentence true or false? Cells without receptors are not affected by hormones. _______________
7. Is the following sentence true or false? Generally, the body’s responses to hormones are quicker and shorter lasting than the responses to nerve impulses. _______________

Glands  (page 998)
8. An organ that produces and releases a substance, or secretion, is called a(an) ________________.
9. What is an exocrine gland? ___________________________________________
10. Glands that release sweat, tears, and digestive juices are considered ____________ glands.
11. What is the function of the parathyroid glands? __________________________________________________________________________
____________________________________________________________________________________________________________________________________

**Match the endocrine gland with the hormone it produces.**

<table>
<thead>
<tr>
<th>Endocrine Gland</th>
<th>Hormone It Produces</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Pineal</td>
<td>a. Glucagon</td>
</tr>
<tr>
<td>13. Thyroid</td>
<td>b. Melatonin</td>
</tr>
<tr>
<td>14. Pancreas</td>
<td>c. Epinephrine</td>
</tr>
<tr>
<td>15. Thymus</td>
<td>d. Thyroxine</td>
</tr>
<tr>
<td>16. Adrenal</td>
<td>e. Thymosin</td>
</tr>
<tr>
<td>17. Ovary</td>
<td>f. Testosterone</td>
</tr>
<tr>
<td>18. Testis</td>
<td>g. Estrogen</td>
</tr>
</tbody>
</table>

19. The hormone that regulates metabolism is ________________.

**Hormone Action (page 999)**

20. List the two general groups into which hormones may be classified.
   a. ________________________________
   b. ________________________________

21. Circle the letter of each sentence that is true about steroid hormones.
   a. They are lipids.
   b. They cannot cross cell membranes.
   c. They help regulate gene expression.
   d. They can enter the nucleus.

22. Is the following sentence true or false? Steroid hormones are produced from cholesterol. ______________

23. Circle the letter of each sentence that is true about nonsteroid hormones.
   a. They are proteins, small peptides, or modified amino acids.
   b. They can cross cell membranes.
   c. They rely on secondary messengers.
   d. They cannot enter the nucleus.

24. Is the following sentence true or false? Secondary messengers may include calcium ions, cAMP, nucleotides, and fatty acids. ______________

**Prostaglandins (page 1000)**

25. Hormonelike substances produced by other kinds of cells and tissues are called ________________________________.
26. Why are prostaglandins known as “local hormones”?  

27. Is the following sentence true or false? Some prostaglandins cause smooth muscles to contract.  

Control of the Endocrine System (pages 1000–1001)  

28. When does feedback inhibition occur?  

29. Fill in the missing labels in the diagram to show how the thyroid gland is regulated by feedback controls.  

![Thyroid Gland Diagram]  

30. Circle the letter of each event that occurs when core body temperature begins to drop.  
   a. The hypothalamus produces less TRH.  
   b. More TSH is released.  
   c. Less thyroxine is released.  
   d. Metabolic activity increases.  

31. Is the following sentence true or false? As you lose water, the concentration of dissolved materials in the blood falls.  

Complementary Hormone Action (page 1002)  

32. What is complementary hormone action?  

33. Is the following sentence true or false? Calcitonin increases the concentration of calcium in the blood.  

34. If calcium levels drop too low, the parathyroid glands release .  

35. How does PTH increase calcium levels?  

36. Why is the regulation of calcium levels so important?  

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