Chapters 9 & 10 - Test Review (Human Body Systems)

Human Systems (General):
- Organization within the body (cell - tissues - organs - systems)
- Homeostasis

Nervous system:
- response to stimuli
- 3 types of neurons + parts of the neurons
- nerve impulses
- divisions of the system
  - CNS
    - Brain: meninges, cerebrospinal fluid, cerebrum, cerebellum, brain stem, thalamus, hypothalamus
    - Spinal Cord
  - Peripheral system
- Problems of the nervous system

Endocrine System:
- Hormones, glands and target cells
- Types of glands
- 7 main glands and jobs
- 2 types of hormones
- local hormones
- negative feedback control mechanism
- complimentary hormone action control mechanism

Digestive system:
- types of digestion
- Organs of the system and functions
- Problems of the system

Review Questions

Textbook:

Ch. 35 (p. 917) MC: # 2 - 7
11 - 16, 27, 30

Ch. 39 (p. 1027) MC: 1 - 4
11 - 14, 30

Ch. 38 (p. 993) MC: # 2 - 6, 8
16, 17, 19 - 21

nervous.

endocrine

digestive.

Ch. 35: The Nervous System

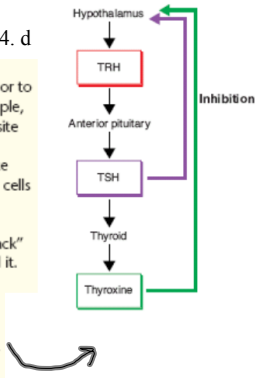
#2. b #3. a #4. d #5. a #6. c #7. b

11. Cell, tissue, organ, organ system, organism
12. Unless cells of the body are kept at a temperature within a certain range, supplied with energy, bathed in fluid, and cleansed of waste—in short, unless homeostasis is maintained—permanent injury or death can occur.
13. The largest part of a typical neuron is the cell body, which contains the cell nucleus and much of the cytoplasm. The cell body is where most of the cell's metabolic activity occurs. Short, branched extensions called dendrites carry impulses from the environment or other neurons toward the cell body. The long fiber that carries impulses away from the cell body is called the axon, which ends in small swellings called axon terminals.
14. During a resting potential, potassium ions (K^+) diffuse across a neuron's cell membrane more easily than do sodium ions (Na^+), resulting in a negative charge inside the cell membrane. During an action potential, the cell membrane becomes more permeable to Na^+ ions, resulting in a reversal of charges.
15. According to the all-or-none principle, any stimulus that is stronger than the threshold will produce an impulse and any stimulus below the threshold will not produce an impulse.
16. The cerebrum consists of two hemispheres, each divided into regions called lobes. A band of tissue known as the corpus callosum connects the two hemispheres. The cerebrum is responsible for the voluntary, or conscious, activities of the body. It is the site of intelligence, learning, and judgment.
27. If an axon is disconnected from a nerve cell body, the pathway of an outgoing nerve impulse will be disrupted.
30. With less myelin, nerve impulses in people with MS will travel more slowly. This will result in loss of control over motor functions, leading to paralysis, poor coordination, slurred speech, blurred vision, and tremor.

Ch. 39: The Endocrine System

#1. b #2. b #3. b #4. d

11. A hormone binds to a specific chemical receptor on a target cell or to receptors inside the cell. For example, progesterone binds to a receptor site inside a uterine cell.
12. Prostaglandins are hormonelike substances that affect only nearby cells or tissues.
13. When the level of a hormone increases in the blood, it "feeds back" to inhibit the gland that produced it.
14. The pituitary gland
30. Students' drawings should show that the level of thyroxine in the blood stimulates the hypothalamus and then the pituitary gland to produce more or less thyroid-stimulating hormone, which, in turn, leads to the production of more or less thyroxine by the thyroid gland.



Ch. 38: The Digestive System

#2. c #3. b #4. c #5. c #6. b #8. d

16. Enzymes chemically break down large food molecules into smaller molecules that can be absorbed and used by the cells of the body.
17. Mechanical digestion is a physical process. Chemical digestion involves the breaking of bonds.
19. The pancreas produces hormones that regulate blood sugar; enzymes that break down carbohydrates, proteins, lipids, and nucleic acids; and sodium bicarbonate, a base that neutralizes stomach acid, allowing these enzymes to work effectively.
20. The villi contain a network of capillaries and lymph vessels that absorb nutrients from the small intestine. Each villus is covered with fingerlike projections called microvilli. These projections greatly increase the surface area available for absorption of nutrients.
21. The primary function of the large intestine is to remove water from undigested food before this material is eliminated from the body.