



Name: _____

Period: _____

Final Test Review

Major Concepts from Chapters 1-16

Chapter 1: The Human Body: An Orientation

- Name the levels of structural organization that make up the human body and explain how they are related.
- Define homeostasis and explain its importance.
- Define negative feedback and describe its role in maintaining homeostasis and normal body function.

Chapter 2: Basic Chemistry

- Differentiate between ionic, polar covalent, and nonpolar covalent bonds, and describe the importance of hydrogen bonds.
- Differentiate clearly between an acid and a base.
- Compare and contrast carbohydrates, lipids, proteins, and nucleic acids in terms of their building blocks, structures, and functions in the body.

Chapter 3: Cells and Tissues

- Define selective permeability, diffusion (including simple and facilitated diffusion and osmosis), active transport, passive transport, solute pumping, exocytosis, endocytosis, phagocytosis, pinocytosis, hypertonic, hypotonic, and isotonic.
- Describe briefly the process of DNA replication and mitosis. Explain the importance of mitotic cell division.
- Name the four major tissue types and their chief subcategories. Explain how the four major tissue types differ structurally and functionally.

Chapter 4: Skin and Body Membranes

- List the general functions of each membrane type-cutaneous, mucous, serous, and synovial-and give its location in the body.
- Name the layers of the skin and describe the characteristics of each.

Chapter 5: The Skeletal System

- List at least three functions of the skeletal system.
- Explain the role of bone salts and the organic matrix in making bone both hard and flexible.
- Discuss/describe how the formation of long bones and flat bones is different.
- Name the three major categories of joints and compare the amount of movement allowed by each.

Chapter 6: The Muscular System

- Describe similarities and differences in the structure and function of the three types of muscle tissue and indicate where they are found in the body.
- Describe the microscopic structure of skeletal muscle and explain the role of actin and myosin containing myofilaments.
- Describe the events of muscle cell contraction.

Chapter 7: The Nervous System

- Define central nervous system and peripheral nervous system and list the major parts of each.
- Describe the events that lead to the generation of a nerve impulse and its conduction from one neuron to another.
- Identify and indicate the functions of the major regions of the cerebral hemispheres, diencephalon, brain stem, and cerebellum in the human brain.

Chapter 8: Special Senses

- Name the layers of the wall of the eye, and indicate the major function of each; trace the pathway of light through the eye.
- Identify the structures of the external, middle, and internal ear, and list the functions of each.
- Name the four basic taste sensations and list factors that modify the sense of taste.

Chapter 9: The Endocrine System

- Define hormone and target organ.
- Define negative feedback and describe its role in regulating blood levels of the various hormones.
- List hormones produced by the endocrine glands and discuss their general functions.

Chapter 10: Blood

- Describe the composition of plasma and discuss its importance in the body.
- List the cell types making up the formed elements, and describe the major functions of each type.
- Describe the ABO and Rh blood groups.

Chapter 11: The Cardiovascular System

- Trace the pathway of blood through the heart.
- Name the elements of the intrinsic conduction system of the heart and describe the pathway of impulses through this system.
- Compare and contrast the structure and function of arteries, veins, and capillaries.

Chapter 12: The Lymphatic System and Body Defenses

- Explain how the lymphatic system is functionally related to the cardiovascular and immune systems.
- Describe the protective functions of skin and mucous membranes.
- Name the two arms of the adaptive defense system and relate each to a specific lymphocyte type (B or T cell).

Chapter 13: The Respiratory System

- Name the organs forming the respiratory passageway from the nasal cavity to the alveoli of the lungs and describe the function of each.
- Explain how the respiratory muscles cause volume changes that lead to air flow into and out of the lungs.
- Describe how oxygen and carbon dioxide are transported in the blood.

Chapter 14: The Digestive System and Body Metabolism

- Name the organs of the alimentary canal and accessory digestive organs and identify each on an appropriate diagram or model.
- List the major enzymes or enzyme groups produced by the digestive organs or accessory glands and name the foodstuffs on which they act.
- Recognize the uses of carbohydrates, fats, and proteins in cell metabolism.

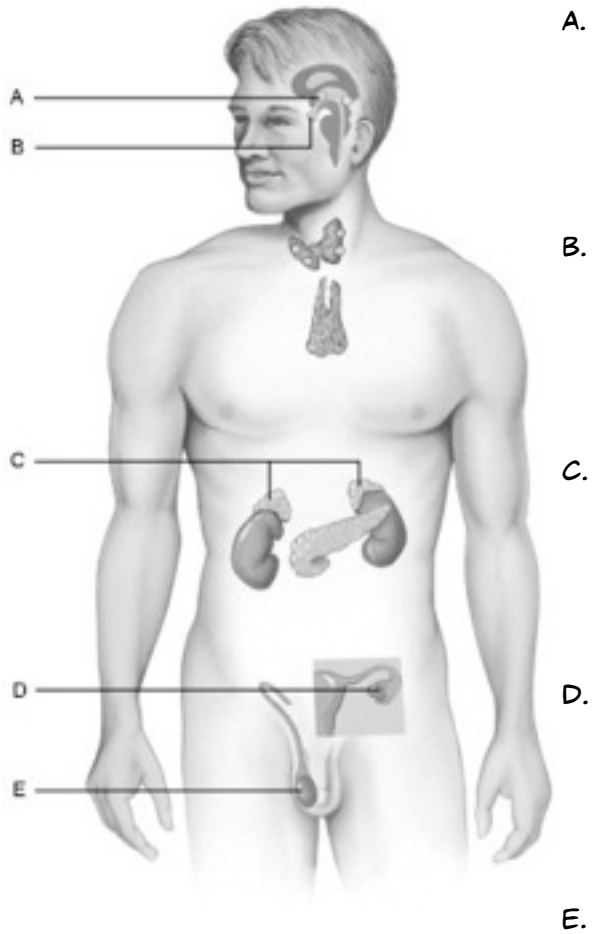
Chapter 15: The Urinary System

- Identify the following regions of a kidney (longitudinal section): hilum, cortex, medulla, medullary pyramids, calyces, pelvis, and renal columns.
- Describe the process of urine formation, identifying the areas of the nephron that are responsible for filtration, reabsorption, and secretion.
- Explain the role of antidiuretic hormone (ADH) and aldosterone in the regulation of water balance by the kidney.

Chapter 16: The Reproductive System

- Describe the various stages of meiosis.
- Compare and contrast spermatogenesis and oogenesis.
- Define fertilization and zygote; explain the prevention of polyspermy.
- Explain the major events that occur during the menstrual cycle.

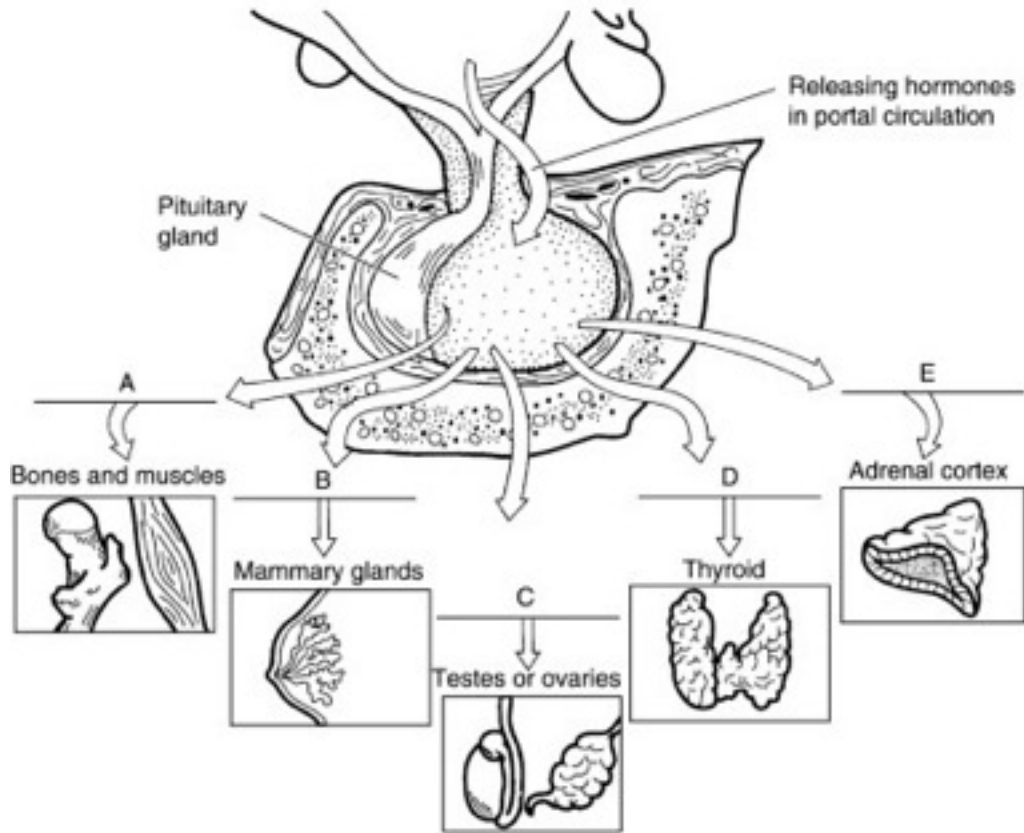
1. Identify the following endocrine glands, list the hormones produced by each gland, and list the target for each hormone.



2. Five other glands are shown in the diagram above that aren't identified by a letter. List each of the glands and list the hormone(s) produced by each.

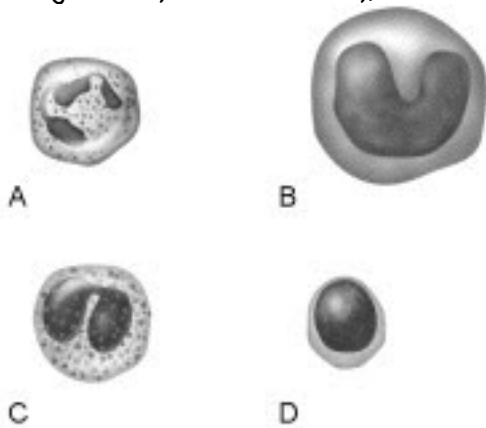
- 1.
- 2.
- 3.
- 4.
- 5.

3. Identify the anterior pituitary hormones that targets the organs/glands shown in the diagram. Additionally, list the posterior pituitary hormones too.



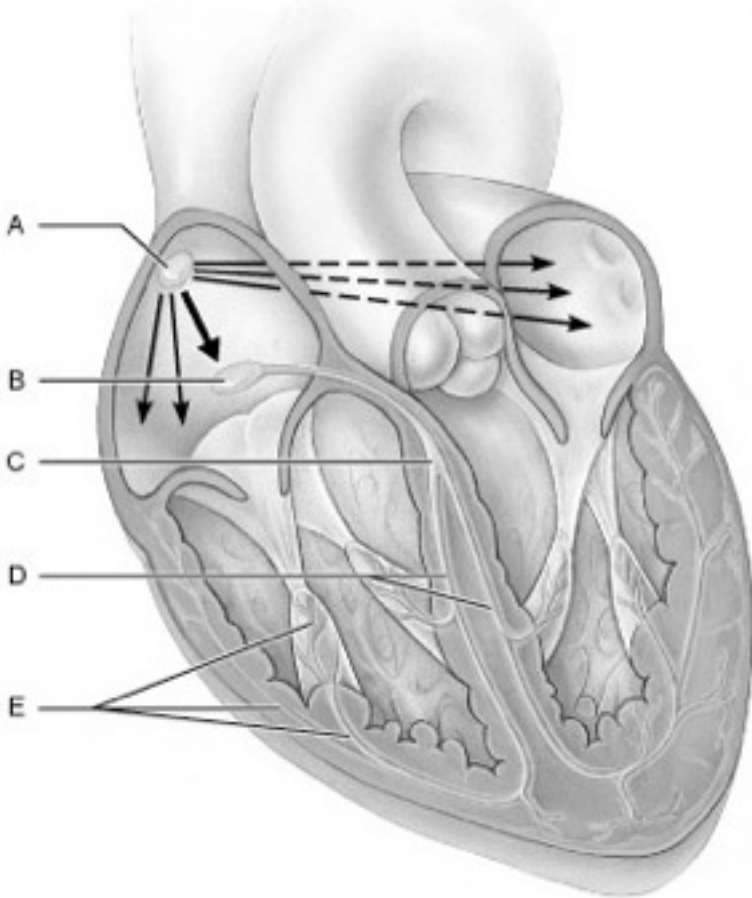
- A.
- B.
- C.
- D.
- E.

4. Identify the four leukocytes shown below. List a function for each and identify the granulocytes from the agranulocytes. Additionally, list the missing leukocyte along with its function.



- A.
- B.
- C.
- D.

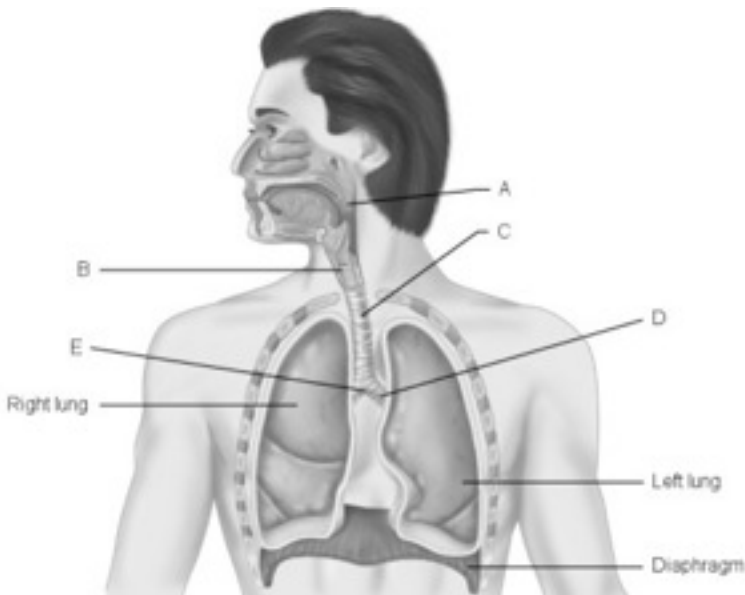
5. In the heart diagram below, identify the structures involved in the conduction of signals through the heart.



- A.
- B.
- C.
- D.
- E.

6. Label the diagram of the heart above with the following terms: left atrium, left ventricle, right atrium, right ventricle, right A-V valve, left A-V valve, and interventricular septum.

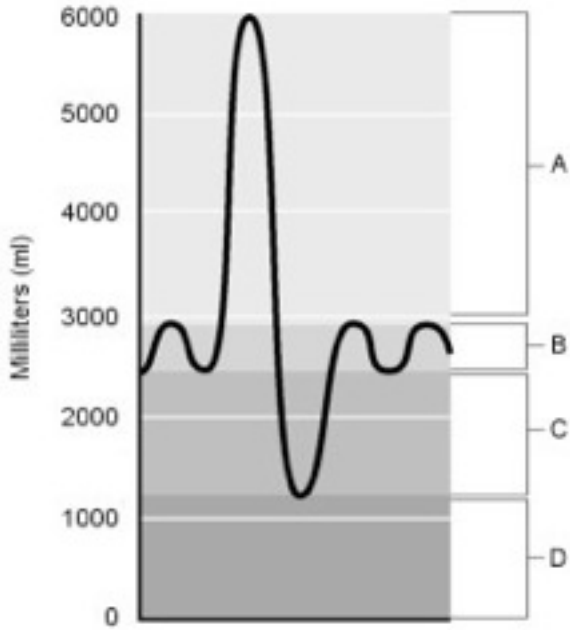
7. Identify the respiratory structures in the diagram below.



- A.
- B.
- C.
- D.
- E.

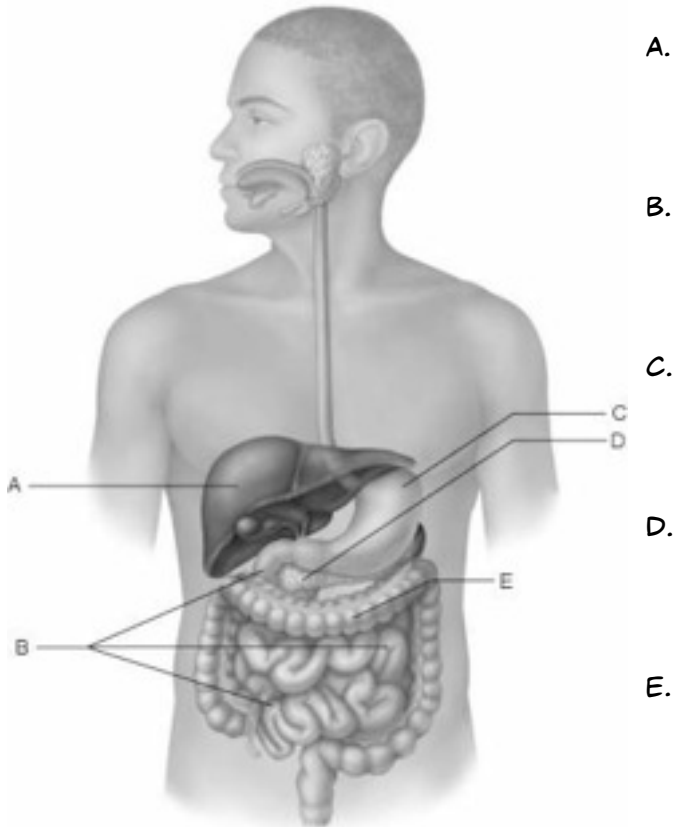
8. Explain the mechanisms of inspiration and expiration of air into and out of the lungs.

9. Label each of the various respiratory volumes in the diagram below. Identify the volumes that make up Vital Capacity



10. Explain how oxygen and carbon dioxide are transported in the blood.

11. Identify the following organs of the digestive system. For each organ, list at least one function.



A.

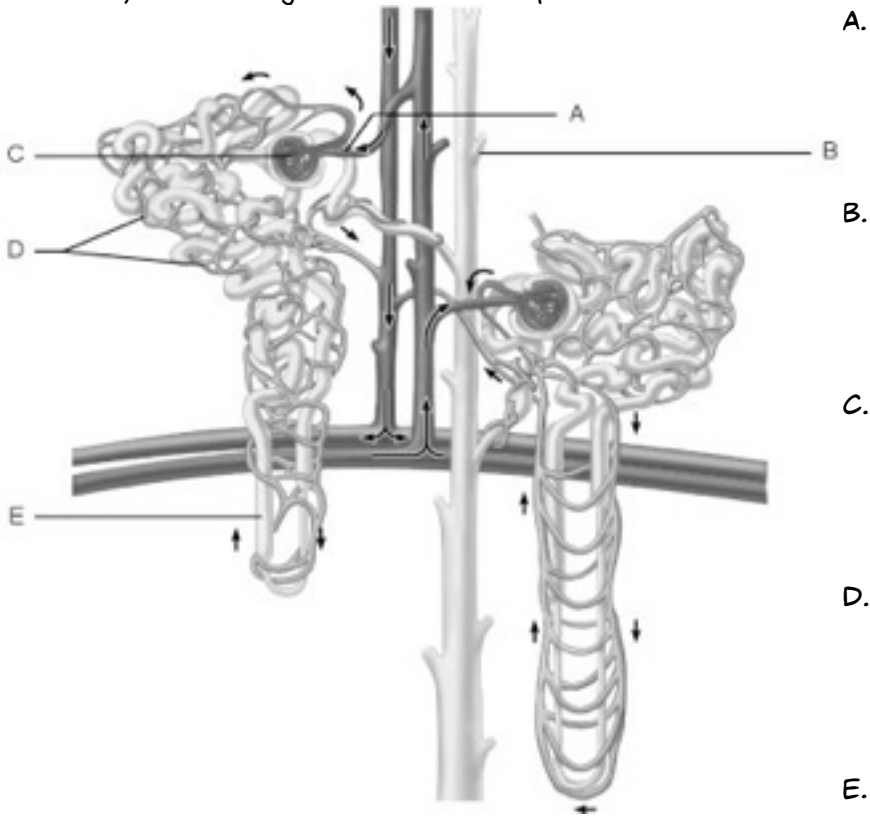
B.

C.

D.

E.

12. Identify the following structure of the nephron. Circle the structure that responds to ADH.



13. Sketch and label a long bone. Identify where the yellow and red marrow are located and the function of each marrow.