

PHS 7.1 - Basic Structure of the Human Body Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

Copyright © 2025 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain from reliable sources accurate, complete, and timely information about this product.

SAMPLE

Questions

- 1. Which system is primarily involved in the absorption of nutrients?**
 - A. Circulatory system**
 - B. Digestive system**
 - C. Respiratory system**
 - D. Muscular system**
- 2. What is one of the primary functions of adipose tissue?**
 - A. Stores minerals**
 - B. Stores fat**
 - C. Provides structural support**
 - D. Produces blood cells**
- 3. What mineral is essential for muscle contraction?**
 - A. Calcium**
 - B. Iron**
 - C. Potassium**
 - D. Sodium**
- 4. Which organ is part of both the digestive system and the endocrine system?**
 - A. Stomach**
 - B. Liver**
 - C. Pancreas**
 - D. Kidney**
- 5. What type of joint is exemplified by the knee?**
 - A. Ball-and-socket joint**
 - B. Pivot joint**
 - C. Hinge joint**
 - D. Ellipsoid joint**
- 6. What is the primary function of the skeletal system?**
 - A. To produce heat for the body**
 - B. To protect internal organs**
 - C. To transport nutrients**
 - D. To facilitate movement**

- 7. What is the main role of the spleen?**
- A. Produce insulin**
 - B. Filter blood and recycle iron**
 - C. Regulate body temperature**
 - D. Store bile**
- 8. What kind of folds in the cell membrane act to bring large molecules into the cell?**
- A. Vesicles**
 - B. Pinocytic vesicles**
 - C. Pseudopodia**
 - D. Ion channels**
- 9. What are hormones?**
- A. Cells that repair tissues**
 - B. Protein structures in muscles**
 - C. Chemical messengers produced by glands that regulate various body functions**
 - D. Parts of the nervous system**
- 10. Cartilage is found in which of the following locations?**
- A. Knees and lungs**
 - B. Spine and ears**
 - C. Heart and veins**
 - D. Brain and kidneys**

Answers

SAMPLE

1. B
2. B
3. A
4. C
5. C
6. B
7. B
8. B
9. C
10. B

SAMPLE

Explanations

SAMPLE

1. Which system is primarily involved in the absorption of nutrients?

A. Circulatory system

B. Digestive system

C. Respiratory system

D. Muscular system

The digestive system is primarily responsible for the absorption of nutrients. This system includes various organs such as the mouth, esophagus, stomach, small intestine, and large intestine, each playing a specific role in breaking down food and facilitating nutrient uptake. In the small intestine, for example, the walls are lined with tiny projections called villi and microvilli that increase the surface area for absorption, allowing nutrients from digested food to enter the bloodstream effectively. The digestive process also involves the secretion of enzymes and digestive acids that break down the food into smaller components, which can then be absorbed into the body. Other systems, such as the circulatory system, do play a role in transporting nutrients once they have been absorbed, but they are not directly involved in the absorption process itself. Therefore, the digestive system is the key player in nutrient absorption, making it the correct answer.

2. What is one of the primary functions of adipose tissue?

A. Stores minerals

B. Stores fat

C. Provides structural support

D. Produces blood cells

Adipose tissue serves as the body's primary means of storing fat. This tissue is composed of adipocytes, or fat cells, that store energy in the form of lipids. Beyond energy storage, adipose tissue plays a crucial role in insulation and cushioning for the body's organs, helping to maintain body temperature and protect against mechanical injury. Additionally, it has endocrine functions, releasing hormones that can influence metabolism and other physiological processes. The option that indicates stores fat accurately reflects this fundamental role of adipose tissue in maintaining energy balance and supporting overall health.

3. What mineral is essential for muscle contraction?

A. Calcium

B. Iron

C. Potassium

D. Sodium

Calcium is essential for muscle contraction because it plays a crucial role in the mechanism of muscle contraction at the cellular level. When a muscle cell is stimulated to contract, calcium ions are released from the sarcoplasmic reticulum into the cytoplasm of the muscle cell. This increase in calcium concentration binds to troponin, a regulatory protein associated with actin filaments. The binding of calcium to troponin causes a conformational change that allows myosin heads to attach to actin, leading to the sliding filament mechanism that results in muscle contraction. While other minerals like iron, potassium, and sodium are important for various bodily functions, they do not directly influence the act of muscle contraction in the way calcium does. Iron is crucial for oxygen transport in the blood, potassium helps regulate muscle and nerve function, and sodium is vital for maintaining fluid balance and transmitting nerve impulses, but none fulfill the specific role that calcium does in muscle contraction.

4. Which organ is part of both the digestive system and the endocrine system?

A. Stomach

B. Liver

C. Pancreas

D. Kidney

The pancreas is unique because it serves as both an essential organ of the digestive system and plays a critical role in the endocrine system. In the digestive system, the pancreas produces digestive enzymes that are released into the small intestine to help break down food. This enzymatic function is crucial for the proper digestion of carbohydrates, proteins, and fats. Simultaneously, the pancreas also has endocrine functions. It contains clusters of cells known as the islets of Langerhans, which produce hormones such as insulin and glucagon. These hormones are vital for regulating blood sugar levels, making the pancreas integral to glucose metabolism. This dual functionality is what makes the pancreas a unique organ straddling both systems. The other organs listed do not fulfill this dual role; they either serve one system or the other, making the pancreas the correct answer.

5. What type of joint is exemplified by the knee?

- A. Ball-and-socket joint**
- B. Pivot joint**
- C. Hinge joint**
- D. Ellipsoid joint**

The knee is classified as a hinge joint, which is characterized by its ability to allow movement primarily in one plane, enabling flexion and extension. This specific structure of the hinge joint is crucial for the function of the knee, facilitating activities such as walking, running, and jumping. Hinge joints have a convex surface fitting into a concave surface, much like the mechanism of a door hinge, allowing for smooth movement in a single direction while also providing stability during weight-bearing activities. This functionality is essential for maintaining balance and mobility in human movement. In contrast, other types of joints such as ball-and-socket joints, pivot joints, and ellipsoid joints allow for different ranges and types of motion, which are not applicable to the knee's primary movements, further reinforcing why the hinge joint classification is appropriate in this context.

6. What is the primary function of the skeletal system?

- A. To produce heat for the body**
- B. To protect internal organs**
- C. To transport nutrients**
- D. To facilitate movement**

The primary function of the skeletal system is to provide protection for internal organs. The bones create a sturdy framework that safeguards vital organs, such as the brain (protected by the skull), the heart and lungs (protected by the rib cage), and the spinal cord (protected by the vertebral column). This protective role is crucial as it helps prevent injury and damage to these organs from external forces. While the skeletal system does indeed contribute to movement by serving as attachment points for muscles, this is not its primary function. The production of heat is primarily managed by muscle tissue, and the transport of nutrients is mainly carried out by the circulatory system. Thus, the key role of the skeletal system in protecting internal structures highlights its essential function in maintaining overall bodily integrity and health.

7. What is the main role of the spleen?

- A. Produce insulin
- B. Filter blood and recycle iron**
- C. Regulate body temperature
- D. Store bile

The main role of the spleen is to filter blood and recycle iron, which makes this choice accurate. The spleen is an essential component of the lymphatic system and plays a critical role in the immune response. It acts as a blood filter, removing old or damaged red blood cells from circulation. During this process, the spleen breaks down hemoglobin from these cells, allowing for the recycling of its components, including iron. This recycled iron can then be used in the synthesis of new hemoglobin for healthy red blood cells. The spleen also helps in the storage of white blood cells and blood itself, contributing to the body's defense mechanisms against infections. It serves as a site for the proliferation of lymphocytes, which are crucial in responding to pathogens in the blood. In contrast, the other functions listed in the other choices do not pertain to the spleen. Producing insulin is a role fulfilled by the pancreas; regulating body temperature is primarily managed by the hypothalamus; and storing bile is a function of the gallbladder.

8. What kind of folds in the cell membrane act to bring large molecules into the cell?

- A. Vesicles
- B. Pinocytotic vesicles**
- C. Pseudopodia
- D. Ion channels

Pinocytotic vesicles are specialized structures involved in the process of endocytosis, where the cell membrane invaginates, or folds inward, to capture and transport large molecules into the cell. This form of "cell drinking" enables cells to uptake larger molecules such as nutrients or other essential substances that are too large to pass through the membrane via simple diffusion or transport proteins. During pinocytosis, the membrane engulfs extracellular fluid and the solutes it contains, forming vesicles that then detach from the membrane and move into the cytoplasm. This process is crucial for nutritional uptake and maintaining cellular functions, particularly in cells that require high levels of uptake of specific macromolecules. In contrast, vesicles are more general structures that may not specifically refer to the process of bringing large molecules into the cell, while pseudopodia are extensions of the cell that allow some cells to engulf larger particles but are not specifically involved in the mechanism of pinocytosis. Ion channels are integral membrane proteins that facilitate the passage of ions across the membrane but do not play a role in the uptake of large molecules.

9. What are hormones?

- A. Cells that repair tissues
- B. Protein structures in muscles
- C. Chemical messengers produced by glands that regulate various body functions**
- D. Parts of the nervous system

Hormones are indeed defined as chemical messengers produced by glands that regulate various body functions. They play a crucial role in coordinating complex processes such as growth, metabolism, reproduction, and mood regulation. Secreted directly into the bloodstream, hormones influence the activity of different organs and tissues. For example, insulin regulates glucose levels in the blood, while adrenaline affects the body's response to stress. Understanding hormones as chemical messengers underscores their importance in maintaining homeostasis, as they can trigger responses at a cellular level to ensure that various body systems work harmoniously. This highlights the significant regulatory role hormones play in overall health and well-being.

10. Cartilage is found in which of the following locations?

- A. Knees and lungs
- B. Spine and ears**
- C. Heart and veins
- D. Brain and kidneys

Cartilage is a flexible connective tissue that plays various critical roles in the human body. It serves as a cushion between bones in joints, provides support in structures such as the ears, and forms part of the respiratory system. In the given context, the spine and ears are notable locations where cartilage is found. In the spine, cartilage is specifically present in intervertebral discs, which act as shock absorbers between vertebrae and allow for flexibility and movement. In the ears, cartilage helps maintain shape and support, ensuring that the ear maintains its structure. Other locations listed, such as knees and lungs, may contain cartilage but are not the primary examples connected with its characteristic functions. The heart and veins do not contain cartilage, as these structures are comprised predominantly of muscle and connective tissues. Similarly, while the brain and kidneys are essential organs, they do not contain cartilage, which primarily serves a supportive or cushioning function in specific areas of the body. Thus, the choice of the spine and ears effectively highlights the key roles of cartilage in maintaining the body's structure and function.