

# Advanced Human Body Systems

Human Body Basics · Practice Test · 20 Questions

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**1. Which component of the innate immune system is responsible for phagocytosing (engulfing and digesting) pathogens and cellular debris, acting as the first line of cellular defense?**

- A) Plasma cells
- B) Mast cells
- C) Neutrophils
- D) B lymphocytes

**2. The process of reabsorption in the nephron, critical for conserving water and essential solutes, primarily occurs in which segment?**

- A) Glomerulus
- B) Bowman's capsule
- C) Distal convoluted tubule
- D) Loop of Henle and Proximal convoluted tubule

**3. What is the primary function of the epididymis in the male reproductive system?**

- A) To produce testosterone
- B) To store and mature sperm
- C) To transport sperm to the vas deferens
- D) To synthesize seminal fluid

**4. Which type of glial cell in the central nervous system produces myelin, a fatty sheath that insulates axons and speeds up nerve impulse transmission?**

- A) Astrocytes
- B) Microglia
- C) Oligodendrocytes
- D) Ependymal cells

**5. The 'fight-or-flight' response, mediated by the sympathetic nervous system, leads to the release of adrenaline (epinephrine) and noradrenaline (norepinephrine) from which endocrine gland?**

- A) Thyroid gland
- B) Pituitary gland
- C) Adrenal glands
- D) Pancreas

**6. Which hormone, secreted by the thyroid gland, plays a crucial role in regulating metabolism by increasing oxygen consumption and heat production in most tissues?**

- A) Calcitonin
- B) Parathyroid hormone
- C) Thyroxine (T4)
- D) Insulin

**7. The process by which mature red blood cells are produced is called erythropoiesis, and it is stimulated by the hormone erythropoietin (EPO), which is primarily synthesized by which organ?**

- A) Liver
- B) Spleen
- C) Bone marrow
- D) Kidneys

**8. What is the primary site of nutrient absorption in the digestive system, characterized by its extensive surface area due to villi and microvilli?**

- A) Stomach
- B) Large intestine
- C) Duodenum
- D) Small intestine

**9. Which neurotransmitter is primarily involved in muscle contraction at the neuromuscular junction, and also plays a role in learning and memory in the central nervous system?**

- A) Dopamine
- B) Serotonin
- C) Acetylcholine
- D) GABA

**10. The body's ability to maintain a stable internal environment, despite external changes, is known as homeostasis. Which system is particularly crucial for regulating blood glucose levels through the action of insulin and glucagon?**

- A) Respiratory system
- B) Endocrine system
- C) Nervous system
- D) Circulatory system

**11. Which of the following is the correct order of layers found in the wall of the digestive tract, from lumen outward?**

- A) Muscularis externa, submucosa, mucosa, serosa
- B) Mucosa, submucosa, muscularis externa, serosa
- C) Serosa, muscularis externa, submucosa, mucosa
- D) Submucosa, mucosa, serosa, muscularis externa

**12. The primary function of the alveoli in the lungs is gas exchange. What is the approximate surface area of the alveoli in an adult human, facilitating this vital process?**

- A) 1 square meter
- B) 10 square meters
- C) 70 square meters
- D) 150 square meters

**13. Which protein is the primary structural component of connective tissues like tendons and ligaments, providing tensile strength?**

- A) Actin
- B) Myosin
- C) Collagen
- D) Elastin

**14. The semicircular canals and the vestibule within the inner ear are primarily responsible for detecting which type of sensation?**

- A) Hearing
- B) Smell
- C) Balance and spatial orientation
- D) Taste

**15. What is the name of the serous membrane that lines the abdominal cavity and also covers the abdominal organs?**

- A) Pleura
- B) Pericardium
- C) Peritoneum
- D) Synovium

**16. Which specific type of white blood cell is responsible for producing antibodies, playing a critical role in the adaptive immune response?**

- A) Neutrophils
- B) Eosinophils
- C) Basophils
- D) B lymphocytes (Plasma cells)

**17. The process of cellular respiration, which generates ATP, occurs predominantly within which organelle?**

- A) Nucleus
- B) Ribosome
- C) Endoplasmic reticulum
- D) Mitochondrion

**18. Which structure within the brainstem is crucial for regulating breathing rate and depth?**

- A) Cerebellum
- B) Thalamus
- C) Pons and Medulla Oblongata
- D) Hypothalamus

**19. What is the primary role of the spleen in the human body?**

- A) Producing digestive enzymes
- B) Filtering blood, removing old red blood cells, and storing white blood cells
- C) Regulating blood pressure
- D) Producing hormones for growth

**20. The process by which unabsorbed water and electrolytes are removed from the chyme, forming feces, primarily occurs in which part of the digestive system?**

- A) Small intestine
- B) Stomach
- C) Large intestine
- D) Esophagus