

Advanced Human Anatomy and Physiology

Biology · Answer Key · 12 Questions

1. Which specific hormone is secreted by the alpha cells of the Islets of Langerhans in the pancreas to increase blood glucose levels?

- A) Insulin
- B) Glucagon**
- C) Somatostatin
- D) Gastrin

2. In the human nephron, which structure is primarily responsible for the reabsorption of water via the action of antidiuretic hormone (ADH)?

- A) Proximal convoluted tubule
- B) Loop of Henle
- C) Distal convoluted tubule
- D) Collecting duct**

3. Which leukocyte type is characterized by a multi-lobed nucleus and is the most abundant white blood cell in the human circulatory system?

- A) Neutrophil**
- B) Basophil
- C) Eosinophil
- D) Monocyte

4. The 'pacemaker' of the human heart is the sinoatrial (SA) node; where exactly is it located?

- A) Right atrium wall**
- B) Left ventricle apex
- C) Interventricular septum
- D) Right ventricle base

5. Which mineral is essential for the structure of hemoglobin and the binding of oxygen in erythrocytes?

- A) Magnesium
- B) Calcium
- C) Iron**
- D) Zinc

6. What is the primary function of the myelin sheath produced by oligodendrocytes in the central nervous system?

- A) Synthesizing neurotransmitters
- B) Increasing nerve impulse velocity**
- C) Providing structural support to axons
- D) Removing cellular waste

7. Which specific region of the brain is primarily responsible for the regulation of core body temperature, thirst, and hunger?

- A) Thalamus
- B) Cerebellum
- C) Hypothalamus**
- D) Pons

8. During muscle contraction, which protein filament forms the thick filaments of the sarcomere?

- A) Actin
- B) Myosin**
- C) Troponin
- D) Tropomyosin

9. What is the anatomical term for the functional unit of the lung where gas exchange occurs?

- A) Bronchiole
- B) Trachea
- C) Alveolus**
- D) Pleura

10. In the human digestive tract, which enzyme is responsible for the initiation of protein digestion?

- A) Pepsin**
- B) Amylase
- C) Lipase
- D) Trypsin

11. Which immunoglobulin class is the most abundant in the human body and is the only one capable of crossing the placenta?

- A) IgA
- B) IgM
- C) IgE
- D) IgG**

12. The human axial skeleton consists of 80 bones; which of the following is considered part of the axial skeleton?

- A) Scapula
- B) Femur
- C) Sternum**
- D) Clavicle