

# Advanced Health Science Foundations

Health Education · Answer Key · 20 Questions

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**1. Which specific cranial nerve is primarily responsible for the parasympathetic innervation of the heart, lungs, and digestive tract?**

- A) Vagus nerve**
- B) Trigeminal nerve
- C) Glossopharyngeal nerve
- D) Accessory nerve

**2. What is the clinical term for the abnormal accumulation of fluid in the peritoneal cavity, often associated with liver cirrhosis?**

- A) Ascites**
- B) Edema
- C) Effusion
- D) Hydrops

**3. Which vitamin deficiency is the primary cause of Beriberi, a disease affecting the peripheral nervous system and cardiovascular system?**

- A) Thiamine (B1)**
- B) Niacin (B3)
- C) Cobalamin (B12)
- D) Ascorbic acid (C)

**4. In immunology, which cell type is the primary producer of antibodies (immunoglobulins) in response to antigens?**

- A) Plasma cells**
- B) Cytotoxic T cells
- C) Natural Killer cells
- D) Macrophages

**5. The Rhesus (Rh) factor, a common blood antigen, is specifically named after which animal model used in its discovery?**

- A) Rhesus macaque**
- B) Rat
- C) Rabbit
- D) Rhesus sparrow

**6. What is the primary function of the hormone erythropoietin, secreted by the kidneys?**

**A) Stimulation of red blood cell production**

- B) Regulation of blood glucose
- C) Control of electrolyte balance
- D) Stimulation of platelet aggregation

**7. Which phase of the cell cycle is characterized by the replication of DNA?**

**A) S phase**

- B) G1 phase
- C) G2 phase
- D) M phase

**8. In the context of epidemiology, what does the term 'basic reproduction number' ( $R_0$ ) represent?**

**A) Average secondary infections produced by one case in a susceptible population**

- B) The mortality rate of a pathogen
- C) The incubation period of a virus
- D) The vaccination coverage threshold

**9. Which organ is responsible for the synthesis of the majority of plasma proteins, including albumin?**

**A) Liver**

- B) Spleen
- C) Pancreas
- D) Gallbladder

**10. What condition is defined by a fasting plasma glucose level of 126 mg/dL (7.0 mmol/L) or higher on two separate occasions?**

**A) Diabetes Mellitus**

- B) Hypoglycemia
- C) Hyperinsulinemia
- D) Gestational Diabetes

**11. Which hormone, produced by the adrenal cortex, is primarily responsible for regulating sodium retention and potassium excretion in the kidneys?**

**A) Aldosterone**

- B) Cortisol
- C) Adrenaline
- D) DHEA

**12. What is the anatomical term for the functional unit of the kidney responsible for urine formation?**

- A) Nephron**
- B) Neuron
- C) Glomerulus
- D) Alveolus

**13. Which neurological condition is characterized by the degeneration of dopamine-producing neurons in the substantia nigra?**

- A) Parkinson's disease**
- B) Alzheimer's disease
- C) Multiple Sclerosis
- D) Huntington's disease

**14. What is the standard measurement unit for the refractive power of a lens, such as those used in eyeglasses?**

- A) Diopter**
- B) Dyne
- C) Decibel
- D) Dalton

**15. Which structure in the human ear is responsible for transducing sound vibrations into electrical signals?**

- A) Cochlea**
- B) Pinna
- C) Tympanic membrane
- D) Semicircular canals

**16. In genetics, what is the term for an individual having two identical alleles at a particular gene locus?**

- A) Homozygous**
- B) Heterozygous
- C) Hemizygous
- D) Polyploid

**17. Which immunoglobulin class is the first to be produced in response to a primary infection?**

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

**18. What is the name of the connective tissue that connects muscle to bone?**

- A) Tendon**
- B) Ligament
- C) Fascia
- D) Cartilage

**19. The 'SA node' (Sinoatrial node) is commonly known by what functional title in the human heart?**

- A) Natural pacemaker**
- B) Atrioventricular valve
- C) Bundle of His
- D) Purkinje fiber

**20. Which mineral is a crucial structural component of the hemoglobin molecule, allowing for oxygen transport?**

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