

Introduction to Anatomy and Physiology

Biology · Answer Key · 39 Questions

1. What is the scientific study of the structure of living organisms called?

- A) Physiology
- B) Anatomy**
- C) Cytology
- D) Histology

2. Which subdivision of anatomy requires a microscope to view structures like cells and tissues?

- A) Gross anatomy
- B) Developmental anatomy
- C) Microscopic anatomy**
- D) Regional anatomy

3. Physiology is the study of what aspect of living organisms?

- A) Structure
- B) Function**
- C) Growth
- D) Reproduction

4. What is the basic unit of life according to the structural organization of the human body?

- A) Molecule
- B) Atom
- C) Cell**
- D) Tissue

5. Which level of structural organization involves atoms and molecules?

- A) Chemical level**
- B) Cellular level
- C) Tissue level
- D) Organ level

6. What is the process of all chemical reactions in the body called?

- A) Catabolism
- B) Anabolism
- C) Metabolism**
- D) Responsiveness

7. Which of the following is a requirement for human life?

- A) Movement
- B) Reproduction
- C) Oxygen**
- D) Organization

8. What is the primary function of the respiratory system?

- A) Voice production
- B) Olfaction
- C) Gas Exchange**
- D) Temperature regulation

9. Which part of the respiratory system filters, warms, and moistens air?

- A) Pharynx
- B) Larynx
- C) Trachea
- D) Nose/Nasal cavity**

10. What is the primary function of the alveoli in the lungs?

- A) Producing sound
- B) Filtering air
- C) Gas exchange**
- D) Warming air

11. Which muscle is the main muscle used in breathing?

- A) Intercostal muscles
- B) Diaphragm**
- C) Abdominal muscles
- D) Pectoral muscles

12. What is the process of removing harmful metabolic waste products from the body called?

- A) Respiration
- B) Nutrition
- C) Excretion**
- D) Transport

13. Which type of respiration uses oxygen to break down glucose, producing more energy?

A) Anaerobic respiration

B) Aerobic respiration

C) Cellular respiration

D) External respiration

14. The movement of nutrients, gases, hormones, and waste products within the body is known as:

A) Excretion

B) Respiration

C) Nutrition

D) Transport / Circulation

15. What is the process of producing new individuals of the same species called?

A) Growth

B) Differentiation

C) Reproduction

D) Metabolism

16. The process by which unspecialized cells change into specialized cells is called:

A) Growth

B) Differentiation

C) Reproduction

D) Metabolism

17. What is the primary function of the kidneys?

A) Digesting food

B) Filtering blood plasma

C) Producing hormones for growth

D) Regulating body temperature

18. Which part of the urinary system stores urine?

A) Kidney

B) Ureter

C) Urinary bladder

D) Urethra

19. The functional units of the kidneys are called:

A) Nephrons

B) Renal corpuscles

C) Renal tubules

D) Calcyces

20. What are the three basic processes of urine formation?

A) Filtration, reabsorption, secretion

B) Digestion, absorption, excretion

C) Inhalation, exhalation, diffusion

D) Sensation, integration, response

21. What is the central nervous system composed of?

A) Brain and spinal nerves

B) Brain and cranial nerves

C) Brain and spinal cord

D) Spinal cord and cranial nerves

22. Which part of the nervous system controls voluntary activities and transmits impulses to skeletal muscles?

A) Autonomic Nervous System

B) Somatic Nervous System

C) Enteric Nervous System

D) Peripheral Nervous System

23. The 'fight or flight' response is primarily associated with which division of the autonomic nervous system?

A) Parasympathetic Nervous System

B) Sympathetic Nervous System

C) Enteric Nervous System

D) Somatic Nervous System

24. Which cranial nerve is primarily responsible for vision?

A) Olfactory nerve (CN I)

B) Optic nerve (CN II)

C) Oculomotor nerve (CN III)

D) Trochlear nerve (CN IV)

25. The cerebellum is mainly responsible for:

- A) Conscious thought
- B) Regulating breathing
- C) Coordination of voluntary movements**
- D) Relaying sensory information

26. What is the main function of the medulla oblongata?

- A) Processing visual information
- B) Controlling heart rate and breathing**
- C) Relaying sensory information to the cerebrum
- D) Coordinating fine motor skills

27. What are the three protective layers surrounding the brain and spinal cord called?

- A) Meninges**
- B) Ventricles
- C) Nerves
- D) Blood vessels

28. Which of the following is a function of cerebrospinal fluid (CSF)?

- A) Producing red blood cells
- B) Transporting oxygen to tissues
- C) Cushioning the brain and spinal cord**
- D) Filtering waste from blood

29. What is the primary role of the Circle of Willis in the brain's blood supply?

- A) To increase blood pressure
- B) To provide collateral circulation if an artery is blocked**
- C) To filter waste products
- D) To regulate breathing rate

30. Which of the following is a characteristic of the blood-brain barrier (BBB)?

- A) It allows all substances to pass freely
- B) It is absent in newborns
- C) It is a selective barrier that protects the brain**
- D) It is primarily composed of bone

31. What are the two main divisions of the peripheral nervous system?

- A) Central and Autonomic
- B) Somatic and Autonomic**
- C) Sympathetic and Parasympathetic
- D) Sensory and Motor

32. Which nerve carries sensory information from the skin, muscles, and joints to the spinal cord?

- A) Ventral root
- B) Dorsal root**
- C) Meningeal branch
- D) Rami communicantes

33. What is a dermatome?

- A) A group of muscles supplied by a single spinal nerve
- B) An area of skin supplied by the sensory fibers of a single spinal nerve**
- C) A network of nerves formed by ventral rami
- D) A protective membrane surrounding the spinal cord

34. Which nerve plexus supplies the entire upper limb?

- A) Cervical Plexus
- B) Brachial Plexus**
- C) Lumbar Plexus
- D) Sacral Plexus

35. The 'rest and digest' activities are primarily controlled by which part of the autonomic nervous system?

- A) Sympathetic Nervous System
- B) Parasympathetic Nervous System**
- C) Enteric Nervous System
- D) Somatic Nervous System

36. Which neurotransmitter is released by most postganglionic sympathetic neurons?

- A) Acetylcholine
- B) Dopamine
- C) Serotonin
- D) Noradrenaline**

37. Which cranial nerve controls pupil constriction and lens accommodation?

- A) Optic nerve (CN II)
- B) Facial nerve (CN VII)
- C) Oculomotor nerve (CN III)**
- D) Vagus nerve (CN X)

38. What is the main function of the epineurium in a peripheral nerve?

- A) Surrounds individual nerve fibers
- B) Surrounds a bundle of nerve fibers
- C) Provides mechanical strength and protection to the entire nerve**
- D) Supplies oxygen and nutrients to nerve fibers

39. The 'Haldane effect' describes the relationship between oxygen and the transport of which other gas?

- A) Nitrogen
- B) Carbon dioxide**
- C) Hydrogen
- D) Oxygen