

Biological Regulation and Health

Biology · Answer Key · 20 Questions

1. What is the process by which living beings maintain balance?

- A) Metabolism
- B) Regulation**
- C) Excretion
- D) Respiration

2. Which component of a regulation mechanism captures a stimulus?

- A) Modulator
- B) Effector
- C) Receptor**
- D) Efferent pathway

3. What is the primary basis of the nervous system's regulation?

- A) Hormones
- B) Electrical impulses**
- C) Chemical messengers
- D) Glands

4. What are the chemical messengers used in the endocrine system?

- A) Neurons
- B) Hormones**
- C) Stimuli
- D) Reflexes

5. Which gland secretes insulin when blood glucose increases?

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

6. What type of nutrition is characteristic of producers?

- A) Heterotrophic
- B) Autotrophic**
- C) Decomposers
- D) Consumers

7. Which type of digestion is more specialized and flows in one direction?

- A) Intracellular
- B) Extracellular**
- C) Cellular
- D) Digestive vacuole

8. What is the main function of respiration at the cellular level?

- A) Waste elimination
- B) Energy production**
- C) Water balance
- D) Nutrient absorption

9. Which system is responsible for eliminating metabolic waste to maintain internal stability?

- A) Respiratory system
- B) Circulatory system
- C) Excretory system**
- D) Digestive system

10. The renal system regulates which of the following?

- A) Body temperature
- B) Blood glucose levels
- C) Water balance, osmotic pressure, ions, and blood pH**
- D) Muscle contraction

11. What is an evolutionary adaptation for digestion in mammals?

- A) Vacuoles
- B) Complete digestive tubes with mouth and anus**
- C) Protonephridia
- D) Malpighi tubules

12. Which of the following is an example of indirect respiration?

- A) Direct respiration in bacteria
- B) Gills in fish**
- C) Photosynthesis in plants
- D) Cellular oxidation

13. An open circulatory system is found in which group?

- A) Annelids
- B) Humans
- C) Arthropods**
- D) Vertebrates

14. What are the excretory structures found in vertebrates?

- A) Protonephridia
- B) Malpighi tubules

C) Nephrons

- D) Digestive tubes

15. Which of these is a recommended hygienic measure?

- A) Consuming toxic substances

B) Sleeping 6-8 hours

- C) Avoiding water intake
- D) Being sedentary

16. What are the main parts of a microscope mentioned?

- A) Cell wall, nucleus, cytoplasm

B) Ocular lens, objective lens, stage, and macrometric screw

- C) Mitochondria, ribosomes, endoplasmic reticulum
- D) Proton, neutron, electron

17. What is the physiological action based on the nervous system's reflex arc?

- A) Anatomical basis

B) Reflex action

- C) Chemical messenger
- D) Homeostasis

18. What is the role of feedback in a regulatory mechanism?

- A) To initiate the stimulus
- B) To process information

C) To allow variation or maintenance of the response

- D) To capture the stimulus

19. What is the primary function of vegetative functions and metabolism?

- A) Reproduction

B) Maintaining life and energy exchange with the environment

- C) Locomotion
- D) Sensory perception

20. What is glucagon secreted by the pancreas in response to?

- A) Increased glucose levels

B) Decreased glucose levels

- C) Increased stress
- D) Decreased water intake