

Functional Organization & Homeostasis — MCQs

1. Which level of organization represents the basic structural and functional unit of the human body?
 - a) Tissue
 - b) Cell
 - c) Organ
 - d) System
2. The study of disordered body function due to disease is called:
 - a) Anatomy
 - b) Pathophysiology
 - c) Physiology
 - d) Pharmacology
3. Which of the following systems is directly responsible for removing metabolic wastes?
 - a) Digestive system
 - b) Respiratory system
 - c) Urinary system
 - d) Muscular system
4. The endocrine system regulates homeostasis by:
 - a) Releasing electrical impulses
 - b) Sending nerve impulses
 - c) Secreting hormones into the blood
 - d) Contracting skeletal muscles
5. Which of the following is NOT part of the immune system?
 - a) Spleen
 - b) Thymus
 - c) Appendix
 - d) Liver
6. The study of the effect of drugs on body processes is known as:
 - a) Anatomy
 - b) Pathophysiology
 - c) Pharmacology
 - d) Biochemistry
7. Which of the following levels involves atoms forming molecules?
 - a) Cellular level
 - b) Tissue level
 - c) Chemical level
 - d) Organ level
8. The body's internal environment is maintained stable through:
 - a) Metabolism
 - b) Homeostasis
 - c) Movement
 - d) Reproduction
9. Which fluid directly surrounds the body's cells?
 - a) Blood plasma
 - b) Intracellular fluid
 - c) Interstitial fluid
 - d) Cerebrospinal fluid

10. The term "ICF" refers to:

- a) Intercellular fluid
- b) Interstitial cellular fluid
- c) Intracellular fluid
- d) Internal circulation fluid

11. Which characteristic of life refers to detecting and responding to internal or external changes?

- a) Metabolism
- b) Responsiveness
- c) Differentiation
- d) Growth

12. The process by which unspecialized cells become specialized is called:

- a) Growth
- b) Differentiation
- c) Metabolism
- d) Reproduction

13. Which of the following is an example of a systemic disease?

- a) Skin rash
- b) Lung infection
- c) Diabetes mellitus
- d) Ear inflammation

14. Which of the following systems provides the fastest control of homeostasis?

- a) Endocrine system
- b) Nervous system
- c) Cardiovascular system
- d) Urinary system

15. A controlled condition that is being monitored in a feedback loop is known as a:

- a) Receptor
- b) Stimulus
- c) Control variable
- d) Effector

16. Which of the following is the correct sequence in a feedback loop?

- a) Stimulus → Receptor → Control center → Effector
- b) Receptor → Effector → Stimulus → Control center
- c) Effector → Control center → Receptor → Stimulus
- d) Control center → Stimulus → Receptor → Effector

17. Which statement about negative feedback is correct?

- a) It amplifies the initial change
- b) It strengthens the controlled condition
- c) It reverses deviations from the normal range
- d) It is usually harmful

18. Positive feedback mechanisms:

- a) Reverse a change
- b) Are always beneficial
- c) Reinforce a change until interrupted
- d) Maintain equilibrium

19. Which of the following is an example of a positive feedback system?

- a) Blood pressure regulation
- b) Childbirth (labor contractions)
- c) Thermoregulation
- d) Blood glucose regulation

20. The ECF that fills narrow spaces between tissue cells is called:

- a) Plasma
- b) Interstitial fluid
- c) Cytosol
- d) Intracellular fluid

21. Which organ system includes the skin, hair, and nails?

- a) Muscular system
- b) Integumentary system
- c) Skeletal system
- d) Endocrine system

22. The heart and blood vessels belong to which system?

- a) Cardiovascular system
- b) Respiratory system
- c) Immune system
- d) Digestive system

23. Which term refers to the sum of all chemical reactions in the body?

- a) Responsiveness
- b) Homeostasis
- c) Metabolism
- d) Differentiation

24. Catabolism and anabolism are part of which life process?

- a) Growth
- b) Metabolism
- c) Differentiation
- d) Movement

25. A local disease affects:

- a) The whole body
- b) Multiple organs
- c) A specific region of the body
- d) The entire system

26. The system responsible for gas exchange between the body and environment is the:

- a) Circulatory system
- b) Respiratory system
- c) Urinary system
- d) Endocrine system

27. The smallest living structural units of the human body are:

- a) Atoms
- b) Molecules
- c) Cells
- d) Organs

28. Which statement best defines homeostasis?

- a) The process of cell division
- b) The body's ability to maintain a stable internal environment
- c) The body's response to infection
- d) The process of tissue growth

29. The part of the feedback system that receives information and decides the response is:

- a) Receptor
- b) Control center
- c) Effector
- d) Stimulus

30. When the response of a system enhances the original stimulus, it is:

- a) Neutral feedback
- b) Positive feedback
- c) Negative feedback
- d) Homeostatic balance

31. Which system provides the framework that supports and protects organs?

- a) Skeletal system
- b) Muscular system
- c) Nervous system
- d) Digestive system

32. In homeostasis, an effector is responsible for:

- a) Detecting changes
- b) Receiving information
- c) Carrying out the corrective response
- d) Storing information

33. A change in a controlled condition is known as a:

- a) Stimulus
- b) Response
- c) Receptor
- d) Effector

34. Which of the following best describes a symptom?

- a) Objective change observed by a clinician
- b) Subjective experience felt by the patient
- c) Visible structural abnormality
- d) Measurable physical change

35. Signs differ from symptoms in that signs are:

- a) Internal sensations
- b) Observed and measured objectively
- c) Only reported by patients
- d) Always caused by stress

36. The composition of interstitial fluid changes mainly within:

- a) Veins
- b) Arteries
- c) Blood capillaries
- d) Lymphatic vessels

37. Which of the following systems acts through rapid electrical impulses?

- a) Endocrine
- b) Digestive
- c) Nervous
- d) Respiratory

38. The organ system responsible for hormone secretion includes:

- a) Thyroid, pituitary, adrenals
- b) Heart, arteries, veins
- c) Trachea, bronchi, lungs
- d) Kidneys, ureters, bladder

39. Failure of homeostasis can lead to:

- a) Growth
- b) Disease
- c) Reproduction
- d) Movement

40. The total number of cells in the human body is approximately:
- a) 10 million
 - b) 1 billion
 - c) 1 trillion
 - d) 100 trillion

Answer Key

1-b, 2-b, 3-c, 4-c, 5-d, 6-c, 7-c, 8-b, 9-c, 10-c, 11-b, 12-b, 13-c, 14-b, 15-c, 16-a, 17-c, 18-c, 19-b, 20-b, 21-b, 22-a, 23-c, 24-b, 25-c, 26-b, 27-c, 28-b, 29-b, 30-b, 31-a, 32-c, 33-a, 34-b, 35-b, 36-c, 37-c, 38-a, 39-b, 40-d