Introduction to Hormone Types

Biology · Answer Key · 29 Questions

1. What are hormones primarily known for?

A) Regulating cellular processes
B) Providing structural support
C) Facilitating digestion
D) Transporting oxygen

2. Hormones are chemical messengers produced by which system?

A) Nervous system
B) Skeletal system
C) Endocrine system
D) Immune system

3. Which of the following is a major class of hormones based on their chemical structure?

A) Carbohydrates
B) Lipids
C) Proteins
D) Minerals

4. Steroid hormones are derived from which precursor molecule?

A) Amino acids
B) Glucose
C) Cholesterol
D) Nucleotides

5. Peptide hormones are composed of chains of what?

A) Fatty acids
B) Sugars
C) Amino acids
D) Steroids

6. Amine hormones are derived from which amino acid?

A) Glycine
B) Tyrosine
C) Glutamate
D) Alanine

7. Which type of hormone can typically cross the cell membrane easily due to its lipid-soluble nature?

A) Peptide hormones
B) Amine hormones
C) Steroid hormones
D) Protein hormones

8. Hormones that bind to cell surface receptors usually trigger a cascade of events through what?

A) Direct DNA alteration
B) Second messengers
C) Cytoplasmic streaming
D) Mitochondrial activity

9. Which hormone class binds to intracellular receptors and directly influences gene expression?

A) Peptide hormones
B) Amine hormones
C) Steroid hormones
D) Glycoproteins

10. Insulin is an example of which type of hormone?

A) Steroid hormone
B) Peptide hormone
C) Amine hormone
D) Thyroid hormone

11. Thyroid hormones (T3 and T4) are examples of which class of hormones?

A) Steroid hormones
B) Peptide hormones
C) Amine hormones
D) Glycoproteins

12. Estrogen and testosterone are examples of which type of hormone?

A) Peptide hormones
B) Amine hormones
C) Steroid hormones
D) Protein hormones

13. Which of the following is a key characteristic of hormone action?

A) They are produced in large, constant amounts.
B) Their effects are usually slow and long-lasting.
C) They are only active at the site of production.
D) They are rapidly excreted after use.

14. Hormone receptors are typically what type of molecule?

A) Lipids
B) Carbohydrates
C) Proteins
D) Nucleic acids

15. The specificity of hormone action is determined by the presence of what on target cells?

A) Hormone-degrading enzymes
B) Hormone precursors
C) Hormone receptors
D) Hormone transport proteins

16. What is the general function of hormones in the body?

A) To provide immediate physical strength
B) To regulate growth, metabolism, and reproduction
C) To transmit nerve impulses
D) To fight off infections

17. Which hormone type often acts as neurotransmitters as well?

A) Steroid hormones
B) Peptide hormones
C) Amine hormones
D) Protein hormones

18. What is a common mechanism for regulating hormone release?

A) Constant secretion
B) Positive feedback loops only
C) Negative feedback loops
D) No regulation needed

19. Hormones are transported throughout the body primarily via the:

A) Lymphatic system
B) Nervous system
C) Circulatory system
D) Respiratory system

20. Which of the following is NOT a major class of hormones based on chemical structure?

A) Steroids
B) Peptides
C) Carbohydrates
D) Amines

21. What is the role of a second messenger in hormone action?

A) To directly synthesize the hormone
B) To carry the signal from the cell surface receptor into the cell
C) To degrade the hormone
D) To transport the hormone out of the cell

22. Hormones that are water-soluble typically bind to receptors where?

A) Inside the nucleus
B) On the cell membrane
C) In the cytoplasm
D) Within the endoplasmic reticulum

23. Which type of hormone is synthesized as a large precursor molecule and then cleaved?

A) Steroid hormones
B) Amine hormones
C) Peptide hormones
D) Thyroid hormones

24. What is a key difference between peptide and steroid hormones in terms of their mechanism of action?

A) Peptide hormones act quickly, steroid hormones act slowly.
B) Peptide hormones bind to intracellular receptors, steroid hormones bind to cell surface receptors.
C) Peptide hormones are lipid-soluble, steroid hormones are water-soluble.
D) Peptide hormones directly alter gene expression, steroid hormones use second messengers.

25. Which of the following is a characteristic of steroid hormones?

A) They are synthesized from amino acids.
B) They are water-soluble.
C) They bind to intracellular receptors.
D) They have rapid, short-lived effects.

26. Amine hormones, like epinephrine, are derived from:

A) Cholesterol
B) Amino acids
C) Fatty acids
D) Sugars

27. The study of hormones and the endocrine system is called:

A) Neurology
B) Immunology
C) Endocrinology
D) Gastroenterology

28. Hormones that are released into the bloodstream and act on distant target cells are called:

A) Local hormones
B) Autocrine hormones
C) Neurotransmitters
D) Endocrine hormones

29. Which of the following is an example of a hormone that regulates metabolism?

A) Oxytocin
B) Melatonin
C) Thyroid hormone
D) Growth hormone