

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) Homeostasis _____. 1) _____
A) is the maintenance of an unchanging internal state
B) is the maintenance of a relatively stable internal environment
C) is a pathological condition
D) is the way the internal environment influences the external environment
- 2) Most homeostatic mechanisms depend on _____. 2) _____
A) predictable internal conditions B) positive and negative feedback
C) negative feedback D) predictable environmental conditions
- 3) When body temperature is too low, which of the following occurs? 3) _____
A) Muscles relax.
B) Sweat glands are activated.
C) Blood vessels at the body surface dilate and fill with blood.
D) Blood vessels in the skin constrict.
- 4) Which of the following statements apply to freshwater fish? 4) _____
A) They produce dilute urine.
B) They lose water by osmosis.
C) They pump out ions via the gills.
D) The concentration of solutes in their internal fluids is lower than in the surrounding water.
- 5) A necropsy (postmortem analysis) of a marine sea star that died after it was mistakenly placed in fresh water would likely show that it died because _____. 5) _____
A) it was stressed and needed more time to acclimate to the new conditions
B) its contractile vacuoles ruptured
C) its cells dehydrated and lost the ability to metabolise
D) it was so hypertonic to the fresh water that it could not osmoregulate
- 6) The body fluids of an osmoconformer would be _____ with its _____ environment 6) _____
A) hyperosmotic; saltwater B) hypoosmotic; saltwater
C) isoosmotic; saltwater D) isoosmotic; freshwater
- 7) Compared to the seawater around them, most marine invertebrates are _____. 7) _____
A) hyperosmotic B) hyperosmotic and isoosmotic
C) isoosmotic D) hypoosmotic
- 8) Birds secrete uric acid as their nitrogenous waste because uric acid _____. 8) _____
A) can be reused by birds as a protein source
B) is metabolically less expensive to synthesise than other excretory products
C) requires little water for nitrogenous waste disposal, thus reducing body mass
D) is readily soluble in water
- 9) Which of the following is a physiological response that takes place in many animals when they get too hot? 9) _____
A) constriction of blood vessels in the skin B) increased blood flow to the skin
C) slowing of the heart rate D) contraction of muscles

- 10) Which of the following is a function of the kidneys? 10) _____
I) elimination of urea
II) reabsorption of valuable solutes
III) reabsorbing water
A) I B) II C) III D) all of the above
- 11) The transfer of fluid from the glomerulus to Bowman's capsule _____. 11) _____
A) is mainly a consequence of blood pressure in the capillaries of the glomerulus
B) results from active transport
C) is very selective as to which subprotein-sized molecules are transferred
D) transfers large molecules as easily as small ones
- 12) Which process in the nephron is LEAST selective? 12) _____
A) secretion B) active transport C) reabsorption D) filtration
- 13) Reabsorption is the movement of substances from the _____ to the _____. 13) _____
A) kidney... urinary bladder B) blood... nephron
C) filtrate... blood D) blood... filtrate
- 14) Secretion is the movement of substances from the _____ to the _____. 14) _____
A) nephron... blood B) filtrate... blood
C) blood... filtrate D) kidney... urinary bladder
- 15) Hormones are usually transported through _____ and affect only cells with _____. 15) _____
A) intercellular junctions... cell junctions B) blood vessels... cell junctions
C) blood vessels... specific receptors D) ducts... specific receptors
- 16) Hormones regulate _____. 16) _____
A) reproduction, only
B) growth, only
C) metabolism, only
D) Growth, reproduction, and metabolism are regulated by hormones.
- 17) In general, hormones that bind to plasma membrane receptors _____. 17) _____
A) bind to DNA and cause changes in transcription
B) are steroid hormones
C) are produced in the interstitial fluid
D) cannot pass through cell membranes
- 18) Steroid hormones _____. 18) _____
A) begin their action outside the membrane
B) bind to receptors in the plasma membrane
C) are water soluble
D) usually diffuse through the plasma membrane into target cells
- 19) Which of the following is part of the brain? 19) _____
A) adrenal cortex B) thymus C) thyroid D) hypothalamus

- 20) Which of the following hormones is made by the hypothalamus and released by the posterior pituitary? 20) _____
A) estrogen B) insulin
C) growth hormone D) ADH
- 21) Which of the following best describes the relationship of insulin to glucagon? 21) _____
A) They are antagonistic hormones.
B) High levels of insulin inhibit pancreatic secretion of glucagon.
C) Insulin stimulates the pancreas to secrete glucagon.
D) They work together to prepare the body to deal with stress.
- 22) When the concentration of glucose in the blood rises following the digestion of a meal, what is the hormonal response? 22) _____
A) An increased amount of insulin is released.
B) Glucagon and insulin levels in the blood stay the same.
C) Increased amounts of both glucagon and insulin are released.
D) An increased amount of glucagon is released.
- 23) Which of the following hormones causes a rise in the concentration of glucose in the blood? 23) _____
A) insulin B) melatonin C) glucagon D) calcitonin
- 24) Hormones secreted by the posterior pituitary gland are made in the _____. 24) _____
A) hypothalamus B) medulla oblongata
C) cerebellum D) thalamus
- 25) Steroid and peptide hormones typically have in common _____. 25) _____
A) their solubility in cell membranes
B) their requirement for travel through the bloodstream
C) their reliance on signal transduction in the cell
D) the building blocks from which they are synthesised
- 26) Different body cells can respond differently to the same peptide hormones because _____. 26) _____
A) the circulatory system regulates responses to hormones by routing the hormones to specific targets
B) the hormone is chemically altered in different ways as it travels through the circulatory system
C) different target cells have different sets of genes
D) a target cell's response is determined by the components of its signal transduction pathways
- 27) The reason that the steroid hormone aldosterone affects only a small number of cells in the body is that _____. 27) _____
A) nontarget cells destroy aldosterone before it can produce any effect
B) it is unable to enter nontarget cells
C) only its target cells get exposed to aldosterone
D) only its target cells contain aldosterone receptors