Essentials of Anatomy and Physiology, 5e (Martini/Nath)
Chapter 10   The Endocrine System

Multiple-Choice Questions

1) The nervous system
A) produces rapid and specific responses to environmental stimuli.
B) communicates by the release of neurotransmitters.
C) continues to produce a response long after neural output ceases.
D) A and B only
E) all of the above
Answer:  D
Learning Outcome:  10.1
Skill Level:  1 Reviewing Facts and Terms

2) The endocrine system
A) releases chemicals into the bloodstream for distribution throughout the body.
B) releases hormones that alter the metabolic activities of many different tissues and organs simultaneously.
C) produces effects that can last for hours, days, and even longer.
D) A and C only
E) all of the above
Answer:  E
Learning Outcome:  10.1
Skill Level:  1 Reviewing Facts and Terms

3) Generally, the actions of hormones
A) tend to be more widespread than actions of the nervous system.
B) are longer lasting than actions of the nervous system.
C) are slower to react than the nervous system.
D) cause changes in the machinery of the cells.
E) all of the above
Answer:  E
Learning Outcome:  10.1
Skill Level:  2 Reviewing Concepts
4) Peptide hormones
A) are composed of amino acids.
B) are produced by cells in the suprarenal glands.
C) are derived from the amino acid tyrosine.
D) are lipids.
E) are chemically related to cholesterol.
Answer: A
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

5) Steroid hormones
A) are lipids.
B) are structurally similar to cholesterol.
C) bind to cell surface receptors.
D) have characteristics of both A and B.
E) have characteristics of all of the above.
Answer: D
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

6) Steroid hormones
A) are lipids.
B) diffuse through plasma membranes.
C) bind to protein receptors within the cell.
D) cause mRNA synthesis.
E) all of the above
Answer: E
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

7) When a protein or peptide hormone binds to receptors on the surface of a cell,
A) the hormone receptor complex moves into the cytoplasm.
B) the plasma membrane becomes depolarized.
C) a second messenger appears in the cytoplasm.
D) the cell becomes inactive.
E) the hormone is transported to the nucleus, where it alters the activity of the DNA.
Answer: C
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms
8) Steroid hormones  
A) bind to receptors on the surface of the cell.  
B) function by way of a second messenger system.  
C) cannot diffuse through the plasma membrane.  
D) bind to intracellular receptors.  
E) function by activating cAMP.  
Answer: D  
Diff: 1  
Learning Outcome: 10.2  
Skill Level: 1 Reviewing Facts and Terms

9) Hormone concentration levels are most commonly controlled by  
A) positive feedback.  
B) the quantity of circulating hormone.  
C) negative feedback.  
D) cellular demands.  
E) body temperature.  
Answer: C  
Diff: 1  
Learning Outcome: 10.2  
Skill Level: 1 Reviewing Facts and Terms

10) An important second messenger in hormonal action is  
A) cAMP.  
B) ATP.  
C) adenylate cyclase.  
D) calcium.  
E) ADP.  
Answer: A  
Diff: 1  
Learning Outcome: 10.2  
Skill Level: 1 Reviewing Facts and Terms

11) Cyclic AMP often causes activation of  
A) calcium ion channels.  
B) myosin kinase.  
C) phosphodiesterase.  
D) protein kinases.  
E) steroids.  
Answer: D  
Diff: 1  
Learning Outcome: 10.2  
Skill Level: 1 Reviewing Facts and Terms
12) Endocrine organs can be controlled by
A) hormones from other endocrine glands.
B) releasing hormones from the hypothalamus.
C) direct neural stimulation.
D) A and C only
E) all of the above
Answer: E
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

13) Hypothalamic hormones that activate the release of other hormones are called
A) permissive hormones.
B) synergistic hormones.
C) tropic hormones.
D) stimulating hormones.
E) releasing hormones.
Answer: C
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

14) The hypothalamus controls the secretions of the posterior pituitary by way of
A) direct neural stimulation.
B) direct mechanical control.
C) releasing and inhibiting hormones.
D) altering ion concentrations in the anterior pituitary.
E) gap junctions.
Answer: A
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

15) All hormones are
A) steroids.
B) cholesterol based.
C) proteins.
D) inorganic compounds.
E) organic compounds.
Answer: E
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms
16) In studying a group of cells, it is noticed that when stimulated by a particular hormone, there is marked increase in the quantity of adenylate cyclase in a cell. The hormone being studied is probably
A) a steroid.
B) a peptide.
C) testosterone.
D) estrogen.
E) aldosterone.
Answer: B
Diff: 1
Learning Outcome: 10.2
Skill Level: 2 Reviewing Concepts

17) Which of the following is released by axon endings in the posterior pituitary?
A) adenylate cyclase
B) thyroid-stimulating hormone
C) growth hormone
D) antidiuretic hormone
E) melanocyte-stimulating hormone
Answer: D
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

18) The most complex endocrine responses involve the
A) thyroid gland.
B) pancreas.
C) suprarenal glands.
D) hypothalamus.
E) thymus.
Answer: D
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

19) Growth hormone causes
A) enhanced movement of amino acids into cells.
B) increased protein synthesis.
C) increased rate of lipid catabolism.
D) growth of bones and skeletal muscle.
E) all of the above
Answer: E
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms
20) Which of the following primarily targets the gonads?
A) growth hormone
B) follicle-stimulating hormone
C) gonadotropin-releasing hormone
D) insulin
E) thyroxine
Answer: B
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

21) The posterior pituitary gland secretes
A) FSH.
B) TSH.
C) ACTH.
D) OT.
E) MSH.
Answer: D
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

22) Target cells of the releasing and inhibiting hormones are located in the
A) thymus gland.
B) suprarenal gland.
C) anterior pituitary.
D) posterior pituitary.
E) testes.
Answer: C
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

23) The hormone oxytocin
A) promotes uterine contractions.
B) is responsible for milk production in the mammary glands.
C) regulates blood pressure.
D) governs the ovarian cycle.
E) both A and B
Answer: E
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms
24) The pituitary hormone that controls the release of glucocorticoids from the suprarenal cortex is
A) TSH.
B) ACTH.
C) FSH.
D) LH.
E) MSH.
Answer: B
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

25) The pituitary hormone that promotes testosterone release in males and ovulation in females is
A) TSH.
B) ACTH.
C) FSH.
D) LH.
E) GH.
Answer: D
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

26) Which of the following hormones requires a releasing factor from the hypothalamus in order to be released?
A) oxytocin
B) renin
C) ADH
D) prolactin
E) calcitonin
Answer: D
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

27) The pituitary hormone that increases the metabolic activity in most body cells is
A) TSH.
B) ACTH.
C) FSH.
D) LH.
E) PRL.
Answer: A
Diff: 1
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms
28) The pituitary hormone that stimulates increases in bone and muscle mass is 
A) TSH.  
B) ACTH.  
C) MSH.  
D) LH.  
E) GH.  
Answer: E  
Diff: 1  
Learning Outcome: 10.3  
Skill Level: 1 Reviewing Facts and Terms

29) Another name for antidiuretic hormone is 
A) cortisol.  
B) parathyroid hormone.  
C) thymosin.  
D) growth hormone.  
E) vasopressin.  
Answer: E  
Diff: 1  
Learning Outcome: 10.3  
Skill Level: 1 Reviewing Facts and Terms

30) Hypothalamic signals reach the anterior pituitary through the 
A) infundibulum.  
B) hypophyseal portal system.  
C) hypothalamus.  
D) hypophysis.  
E) thymus.  
Answer: B  
Diff: 1  
Learning Outcome: 10.3  
Skill Level: 1 Reviewing Facts and Terms

31) Where are the hormones secreted by the posterior pituitary made? 
A) thyroid  
B) anterior pituitary  
C) hypothalamus  
D) posterior pituitary  
E) suprarenal gland  
Answer: C  
Diff: 1  
Learning Outcome: 10.3  
Skill Level: 1 Reviewing Facts and Terms
32) Two hormones referred to as gonadotropins are
A) GH and TSH.
B) FSH and LH.
C) ADH and ACTH.
D) PRL and OT.
E) ADH and OT.
Answer: B
Diff: 2
Learning Outcome: 10.3
Skill Level: 1 Reviewing Facts and Terms

33) Diabetes insipidus is caused by
A) decreased levels of insulin.
B) decreased numbers of insulin receptors.
C) decreased levels of ADH.
D) decreased numbers of ADH receptors.
E) none of the above
Answer: C
Diff: 1
Learning Outcome: 10.3
Skill Level: 3 Critical Thinking & Clinical Applications

34) Excessive urine production is known as
A) polyphagia.
B) polydipsia.
C) polyuria.
D) polymyositis.
E) none of the above
Answer: C
Diff: 1
Learning Outcome: 10.3
Skill Level: 3 Critical Thinking & Clinical Applications

35) This condition develops when the posterior pituitary no longer releases adequate amounts of ADH.
A) diabetes mellitus
B) diabetes insipidus
C) pituitary dwarfism
D) exophthalmos
E) gigantism
Answer: B
Diff: 1
Learning Outcome: 10.3
Skill Level: 3 Critical Thinking & Clinical Applications
36) This condition is characterized by excessive lengthening of bones.
   A) diabetes mellitus
   B) acromegaly
   C) glucose diabetes
   D) gigantism
   E) all of the above
   Answer: D
   Diff: 1
   Learning Outcome: 10.3
   Skill Level: 3 Critical Thinking & Clinical Applications

37) Hormones from which of the following glands are responsible for the calorigenic effect?
   A) pituitary gland
   B) suprarenal gland
   C) parathyroid gland
   D) thyroid gland
   E) thymus
   Answer: D
   Diff: 1
   Learning Outcome: 10.4
   Skill Level: 1 Reviewing Facts and Terms

38) Thyroid hormone contains the amino acid
   A) lysine.
   B) leucine.
   C) glycine.
   D) tyrosine.
   E) thyronine.
   Answer: D
   Diff: 1
   Learning Outcome: 10.4
   Skill Level: 1 Reviewing Facts and Terms

39) Triiodothyronine is a hormone secreted by the
   A) thyroid gland.
   B) pancreas.
   C) parathyroid glands.
   D) hypothalamus.
   E) all of the above
   Answer: A
   Diff: 1
   Learning Outcome: 10.4
   Skill Level: 1 Reviewing Facts and Terms
40) This gland signals nearly all other body cells.
A) pineal
B) pancreas
C) thymus
D) thyroid
E) parathyroid
Answer: D
Diff: 1
Learning Outcome: 10.4
Skill Level: 1 Reviewing Facts and Terms

41) The hormone that causes the activation of osteoclasts is
A) parathyroid hormone.
B) thyroid hormone.
C) calcitonin.
D) glucagon.
E) oxytocin.
Answer: A
Diff: 1
Learning Outcome: 10.5
Skill Level: 1 Reviewing Facts and Terms

42) Increased levels of the hormone ________ will lead to increased levels of calcium ions in the blood.
A) thymosin
B) calcitonin
C) parathyroid hormone
D) aldosterone
E) cortisol
Answer: C
Diff: 1
Learning Outcome: 10.5
Skill Level: 1 Reviewing Facts and Terms

43) The release of parathyroid hormone is controlled by
A) thyroid hormone.
B) TSH.
C) the hypothalamus.
D) blood calcium levels.
E) all of the above
Answer: D
Diff: 1
Learning Outcome: 10.5
Skill Level: 1 Reviewing Facts and Terms
44) The C-cells of the parathyroid glands produce a hormone that
A) stimulates the formation of white blood cells.
B) increases the level of calcium ions in the blood.
C) increases the level of sodium ions in the blood.
D) increases the level of potassium ions in the blood.
E) decreases the level of calcium ions in the blood.
Answer: B
Diff: 1
Learning Outcome: 10.5
Skill Level: 1 Reviewing Facts and Terms

45) The hormone that is the antagonist of calcitonin is
A) insulin.
B) glucagon.
C) growth hormone.
D) parathyroid hormone.
E) thyroid hormone.
Answer: D
Diff: 1
Learning Outcome: 10.5
Skill Level: 2 Reviewing Concepts

46) Decreased blood calcium levels would result in
A) increased secretion of calcitonin.
B) increased secretion of parathyroid hormone.
C) increased retention of calcium by the kidneys.
D) increased osteoclast activity.
E) increased excitability of neural membranes.
Answer: B
Diff: 1
Learning Outcome: 10.5
Skill Level: 2 Reviewing Concepts

47) Decreased levels of parathyroid hormone could result in
A) tetany.
B) profuse urination.
C) increased sweating.
D) depressed immune activity.
E) all of the above
Answer: A
Diff: 1
Learning Outcome: 10.5
Skill Level: 2 Reviewing Concepts
48) Marissa has had her thyroid gland removed because of a malignant tumor. She takes synthetic thyroid hormone to replace the thyroxine that her thyroid gland would have produced, but she is worried about her blood calcium since she has lost her source of calcitonin. Does she need to worry about this problem?
A) No, the synthetic thyroid hormone will also control the calcium.
B) No, as long as she still has functional parathyroid glands she will maintain proper levels of calcium.
C) No, hormones from the liver and kidneys will regulate calcium through the intestinal tract.
D) Yes, without the calcitonin, high blood levels of calcium will cause convulsions.
E) Yes, without the calcitonin she will suffer heart failure.
Answer: B
Diff: 1
Learning Outcome: 10.5
Skill Level: 3 Critical Thinking & Clinical Applications

49) Cells of the suprarenal cortex produce
A) epinephrine.
B) ADH.
C) aldosterone.
D) parathyroid hormone.
E) insulin.
Answer: C
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms

50) The hormone released from the suprarenal medulla is
A) insulin.
B) aldosterone.
C) cortisol.
D) androgens.
E) none of the above
Answer: E
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms

51) The suprarenal medulla produces
A) androgens.
B) glucocorticoids.
C) mineralocorticoids.
D) epinephrine.
E) steroids.
Answer: D
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms
52) The hormone that causes the conversion of lipids to glucose is
A) thymosin.
B) cortisol.
C) aldosterone.
D) thyroid hormone.
E) gonadotropin.
Answer: B
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms

53) Increased sodium ion concentrations in the body can be caused by
A) cortisol.
B) erythropoietin.
C) thymosin.
D) aldosterone.
E) renin.
Answer: D
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms

54) Two hormones secreted by the suprarenal medulla are
A) CT and PTH.
B) epinephrine and norepinephrine.
C) PRL and ACTH.
D) oxytocin and ADH.
E) FSH and GH.
Answer: B
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms

55) The alpha cells of the pancreas produce
A) insulin.
B) glucagon.
C) rennin.
D) ADH.
E) parathyroid hormone.
Answer: B
Diff: 1
Learning Outcome: 10.8
Skill Level: 1 Reviewing Facts and Terms
56) When blood glucose levels fall,  
A) insulin is released.  
B) glucagon is released.  
C) peripheral cells take up less glucose.  
D) protein synthesis decreases.  
E) all of the above  
Answer: B  
Diff: 1  
Learning Outcome: 10.8  
Skill Level: 1 Reviewing Facts and Terms

57) Which of the following has both endocrine and exocrine functions?  
A) pancreas  
B) anterior pituitary  
C) thyroid  
D) liver  
E) hypothalamus  
Answer: A  
Diff: 1  
Learning Outcome: 10.8  
Skill Level: 1 Reviewing Facts and Terms

58) The pancreatic hormone that causes blood sugar levels to lower is  
A) growth hormone.  
B) cortisol.  
C) insulin.  
D) glucagon.  
E) erythropoietin.  
Answer: C  
Diff: 1  
Learning Outcome: 10.8  
Skill Level: 1 Reviewing Facts and Terms

59) Insulin-dependent diabetes mellitus is also known as  
A) non–insulin-dependent diabetes.  
B) Type II.  
C) Type III.  
D) Type I.  
E) diabetes insipidus.  
Answer: D  
Diff: 1  
Learning Outcome: 10.8  
Skill Level: 1 Reviewing Facts and Terms
60) Insulin directly causes
A) increased heart activity.
B) increased blood pressure.
C) increased glycogen storage.
D) release of lipids by adipose tissue.
E) increased blood glucose levels.
Answer: C
Diff: 2
Learning Outcome: 10.8
Skill Level: 1 Reviewing Facts and Terms

61) Insensitivity of cells to insulin would result in
A) acromegaly.
B) myxedema.
C) Type I diabetes mellitus.
D) Type II diabetes mellitus.
E) Cushing's disease.
Answer: D
Diff: 1
Learning Outcome: 10.8
Skill Level: 3 Critical Thinking & Clinical Applications

62) Hormone-producing cells of the testes produce
A) estrogen.
B) progesterone.
C) testosterone.
D) inhibin.
E) both C and D
Answer: E
Diff: 1
Learning Outcome: 10.9
Skill Level: 1 Reviewing Facts and Terms

63) Preparation of the uterine lining for implantation results from stimulation by
A) growth hormone.
B) thyroid hormone.
C) testosterone.
D) mineralocorticoids.
E) progesterone.
Answer: E
Diff: 1
Learning Outcome: 10.9
Skill Level: 1 Reviewing Facts and Terms
64) The hormone that is released by kidney cells is
A) angiotensin.
B) cortisol.
C) erythropoietin.
D) ADH.
E) epinephrine.
Answer: C
Diff: 1
Learning Outcome: 10.9
Skill Level: 1 Reviewing Facts and Terms

65) Which of the following could cause ineffective production of calcitriol?
A) exposure to too much sunlight
B) lack of sunlight
C) increased levels of MSH
D) increased levels of gonadotrophins
E) inability to produce sufficient amounts of melanin
Answer: B
Diff: 1
Learning Outcome: 10.9
Skill Level: 2 Reviewing Concepts

66) In response to stress, the concentration of epinephrine
A) increases and cortisol decreases.
B) increases and cortisol remains unchanged.
C) and cortisol increases.
D) and cortisol decreases.
E) decreases and cortisol increases.
Answer: C
Diff: 1
Learning Outcome: 10.10
Skill Level: 1 Reviewing Facts and Terms

67) The hormone that dominates during the alarm phase of the general adaptation syndrome (GAS) is
A) testosterone.
B) aldosterone.
C) cortisol.
D) thyroid hormone.
E) epinephrine.
Answer: E
Diff: 1
Learning Outcome: 10.10
Skill Level: 1 Reviewing Facts and Terms
68) During the alarm phase of the general adaptation syndrome (GAS), there is
A) decreased blood flow to skeletal muscles and skin.
B) decreased mental alertness.
C) mobilization of energy reserves.
D) increased urine production.
E) all of the above
Answer: C
Diff: 1
Learning Outcome: 10.10
Skill Level: 1 Reviewing Facts and Terms

69) The hormones that dominate during the resistance phase of the general adaptation syndrome (GAS) are the
A) mineralocorticoids.
B) androgens.
C) glucocorticoids.
D) thyroid hormones.
E) gonadotropins.
Answer: C
Diff: 1
Learning Outcome: 10.10
Skill Level: 1 Reviewing Facts and Terms

70) The exhaustion phase of the general adaptation syndrome (GAS) is characterized by
A) decreased resistance to disease and infection.
B) increased ability to produce glucose from glycogen.
C) increased pumping effectiveness of the heart.
D) increased protein synthesis.
E) both A and C
Answer: A
Diff: 1
Learning Outcome: 10.10
Skill Level: 1 Reviewing Facts and Terms

71) Alcoholic beverages cause excessive urine production by blocking the action of
A) aldosterone.
B) FSH.
C) ADH.
D) cortisol.
E) TSH.
Answer: C
Diff: 1
Learning Outcome: 10.11
Skill Level: 2 Reviewing Concepts
72) Decreased blood flow to the kidneys would lead to
A) renin release.
B) elevated levels of aldosterone.
C) increased levels of erythropoietin.
D) decreased levels of atrial natriuretic peptide.
E) all of the above
Answer: E
Diff: 2
Learning Outcome: 10.11
Skill Level: 2 Reviewing Concepts

73) In Type II diabetes, insulin levels are frequently normal, yet the target cells are less sensitive to the effects of insulin. This suggests that
A) the target cells are impermeable to insulin.
B) the target cells may lack enough insulin receptors.
C) the target cells cannot convert insulin to an active form.
D) the target cells have adequate internal supplies of glucose.
E) none of the above
Answer: B
Diff: 1
Learning Outcome: 10.11
Skill Level: 3 Critical Thinking & Clinical Applications

74) Diabetes mellitus is characterized by
A) glucose in the urine.
B) urine with high osmotic pressure.
C) excessive urine production.
D) blood sugar imbalance.
E) all of the above
Answer: E
Diff: 1
Learning Outcome: 10.11
Skill Level: 3 Critical Thinking & Clinical Applications
Matching Questions

1) Match the endocrine gland in the first column with its associated hormone in the second column.

- 1. pancreas  A. progesterone
- 2. kidney    B. testosterone
- 3. posterior pituitary  C. ADH
- 4. testis     D. glucagon
- 5. ovary     E. EPO

Answer: 1-D, 2-E, 3-C, 4-B, 5-A
Diff: 1
Learning Outcome: 10.11
Skill Level: 1 Reviewing Facts and Terms

Fill in the Blank Questions

1) Peripheral cells sensitive to the presence of hormones are called _________________________.
Answer: target cells
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

2) Hormones from the hypothalamus that alter the activity of the anterior pituitary travel in special blood vessels called the _________________________.
Answer: hypophyseal portal vessels.
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

3) The stimulus for hormone release may be neural, hormonal, or _________________________.
Answer: humoral
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

4) Sometimes a releasing hormone is required for release of another hormone. This property is called _________________________.
Answer: permissiveness
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms
5) Two hormones that have additive effects are called _________________________.
Answer: synergests
Diff: 1
Learning Outcome: 10.2
Skill Level: 1 Reviewing Facts and Terms

6) The thyroid gland is composed of many _________________________ that produce and store thyroid hormone.
Answer: follicles
Diff: 1
Learning Outcome: 10.4
Skill Level: 1 Reviewing Facts and Terms

7) Cells of the thyroid gland are the only cells in the body with a need for the mineral _________________.
Answer: iodine
Diff: 1
Learning Outcome: 10.4
Skill Level: 1 Reviewing Facts and Terms

8) The _________________________ gland is located along the superior border of the kidney.
Answer: suprarenal
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms

9) The inner portion of the suprarenal gland is the suprarenal _______________________.
Answer: medulla
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms

10) Sodium concentration imbalance may cause release of _________________________.
Answer: aldosterone
Diff: 1
Learning Outcome: 10.6
Skill Level: 1 Reviewing Facts and Terms

11) The basic pattern of response that the body produces in response to stress is called the _________________________.
Answer: general adaptation syndrome (GAS)
Diff: 1
Learning Outcome: 10.10
Skill Level: 1 Reviewing Facts and Terms
Essay Questions

1) Explain the interactions of parathyroid hormone and calcitonin.
Answer: Parathyroid hormone and calcitonin are antagonistic hormones released in response to blood calcium levels. Parathyroid hormone is released from the parathyroid glands, and calcitonin is released from the thyroid gland. If blood calcium concentration is high, calcitonin is released. Calcitonin activates osteoblasts and causes calcium to be deposited in bone and thus removed from the blood, restoring normal concentration levels. Parathyroid hormone is released when blood calcium concentration is too low. PTH activates osteoclasts in bone. This causes reabsorption of calcium from the bone and release into the blood, restoring normal blood levels of calcium.

Diff: 2
Learning Outcome: 10.5
Skill Level: 2 Reviewing Concepts
Labeling Exercises

Using the figure above, identify the labeled part.

1) Label A: ________
Answer: Hypothalamus
Diff: 1
Learning Outcome: 10.1
Skill Level: 1 Reviewing Facts and Terms

2) Label B: ________
Answer: Pituitary gland
Diff: 1
Learning Outcome: 10.1
Skill Level: 1 Reviewing Facts and Terms

3) Label C: ________
Answer: Thyroid gland
Diff: 1
Learning Outcome: 10.1
Skill Level: 1 Reviewing Facts and Terms
4) Label D: ________  
Answer: Thymus  
Diff: 1  
Learning Outcome: 10.1  
Skill Level: 1 Reviewing Facts and Terms

5) Label E: ________  
Answer: Suprarenal glands  
Diff: 1  
Learning Outcome: 10.1  
Skill Level: 1 Reviewing Facts and Terms

6) Label F: ________  
Answer: Pineal gland  
Diff: 1  
Learning Outcome: 10.1  
Skill Level: 1 Reviewing Facts and Terms

7) Label G: ________  
Answer: Parathyroid glands  
Diff: 1  
Learning Outcome: 10.1  
Skill Level: 1 Reviewing Facts and Terms

8) Label H: ________  
Answer: Heart  
Diff: 1  
Learning Outcome: 10.1  
Skill Level: 1 Reviewing Facts and Terms

9) Label I: ________  
Answer: Kidney  
Diff: 1  
Learning Outcome: 10.1  
Skill Level: 1 Reviewing Facts and Terms

10) Label J: ________  
Answer: Adipose tissue  
Diff: 1  
Learning Outcome: 10.1  
Skill Level: 1 Reviewing Facts and Terms

11) Label K: ________  
Answer: Digestive tract  
Diff: 1  
Learning Outcome: 10.1  
Skill Level: 1 Reviewing Facts and Terms
12) Label L: ________
Answer: Pancreatic islets
Diff: 1
Learning Outcome: 10.1
Skill Level: 1 Reviewing Facts and Terms

13) Label M: ________
Answer: Gonads
Diff: 1
Learning Outcome: 10.1
Skill Level: 1 Reviewing Facts and Terms