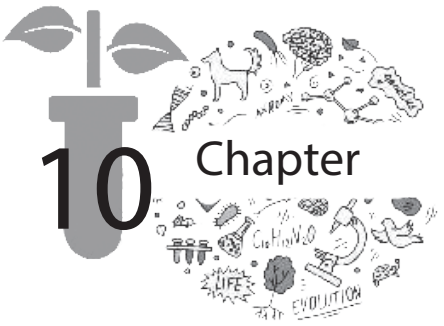


10 Chapter Chemical Control and Coordination

MULTIPLE CHOICE QUESTIONS

Topic 1	Human Endocrine System Introduction

1. Both neurotransmitters and hormones
(a) produce a slower response.
(b) bind to receptors on or in their target cells.
(c) are transported by interstitial fluid.
(d) produce a rapid response.

2. Consider the following statements:
(a) Exocrine glands are the ductless glands.
(b) Sweat glands and gastric glands release their secretions directly into the blood.
Select the correct option.
(a) Both (a) and (b) are true.
(b) (a) is true but (b) is false.
(c) Both (a) and (b) are false.
(d) (a) is false but (b) is true.

3. Which of the following gland types is correctly matched with its examples?
(a) Adrenal gland: exocrine gland
(b) Placenta: exocrine gland
(c) Pancreas: endocrine gland only
(d) Thyroid : endocrine gland

4. Which of the following statements about hormones is/are correct?
I. Hormones are non-nutrient chemicals
II. Hormones act as intercellular messengers
III. Hormones are produced in trace amount
IV. Hormones may be proteins, steroids, glycoproteins and biogenic amines
(a) All (b) I, II, III
(c) IV (d) I, III

5. The organ system that helps regulate the metabolic activities through secretion of hormones is
(a) cardiovascular system
(b) endocrine system
(c) nervous system
(d) digestive system

6. The nervous and endocrine systems interact to coordinate the functions of all the body systems and help to maintain
(a) homeostasis
(b) reflex actions
(c) fight or flight response
(d) stress responses

7. Responses of the endocrine system are _____ and _____ than the responses of the nervous system.
(a) rapid, long-lasting
(b) rapid, briefer
(c) slower, long-lasting
(d) slower, briefer

8. Which of the following statements correctly differentiate the endocrine and nervous systems?
(a) The endocrine system regulates all types of body cells.
(b) Nerve fibers innervate all the body cell types.
(c) Endocrine system acts on specific muscle cells only.
(d) The influence of the nervous system is much broader.

Topic 2 Gland : Endocrine Gland

9. Assertion: The nervous system produces a delayed response that lasts for a longer period.

Reason: Neurotransmitters are released from pre-synaptic neurons.

(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

10. Which of the following statements is false?

(a) Hormones provide chemical coordination, integration and regulation in the human body
(b) Hormones regulate metabolism, growth and development of our organs
(c) Besides hypothalamus, pituitary, pineal, thyroid, adrenal, parathyroid, thymus, etc., GIT, heart, kidney, etc also produce hormones.
(d) Hormone can be used again and again like biocatalyst

Topic 3 The Hypothalamus

11. The small part of the brain that is present below the thalamus and serves as the main link between the nervous and endocrine system is

(a) pons
(b) hypothalamus
(c) brain stem
(d) medulla oblongata

12. Consider the following events:

(a) Production of regulatory hormones from neurosecretory cells.
(b) Hormones are secreted into the portal system.
(c) Hormones move down the axons to axon endings.

Arrange them in sequential order and select the correct option.

(a) A, B, C (b) A, C, B
(c) B, C, A (d) C, A, B

13. The hormones produced by hypothalamic nucle

(a) regulate the functions of the anterior pituitary.
(b) regulate the functions of the posterior pituitary.
(c) regulate the functions of both anterior and posterior pituitary.
(d) inhibit the secretion of posterior pituitary hormones.

14. Which of the following statements about hypothalamic hormones is incorrect?

(a) Hypothalamic releasing hormones stimulate the secretion of anterior pituitary hormones.
(b) Hypothalamic releasing hormones stimulate the secretion of posterior pituitary hormones.
(c) Hypothalamic inhibiting hormones inhibit the secretion of anterior pituitary hormones.
(d) Somatostatin is a hypothalamic inhibitory hormone.

15. GnRH, a hypothalamic hormone, needed in reproduction, acts on-

(a) the posterior pituitary gland and stimulates secretion of LH and relaxin.
(b) the anterior pituitary gland and stimulates secretion of LH and oxytocin.
(c) the anterior pituitary gland and stimulates secretion of LH and FSH.
(d) the posterior pituitary gland and stimulates secretion of oxytocin and FSH.

16. Which of the following hypothalamic hormones is incorrectly matched with its function?

(a) TRH: Stimulates secretion of thyrotropin
(b) PIH: suppresses the secretion of prolactin
(c) GH-RH: stimulates secretion of growth hormone
(d) CRH: stimulates the release of prolactin

17. How many of the following are correct?
(i) Somatostatin is released from hypothalamus.
(ii) Hypothalamic hormones reach the pituitary gland through hypophyseal-hypoportal system.
(iii) Anterior pituitary is under direct neural regulation of hypothalamus.
(a) 1 (b) 2
(c) 3 (d) None of these

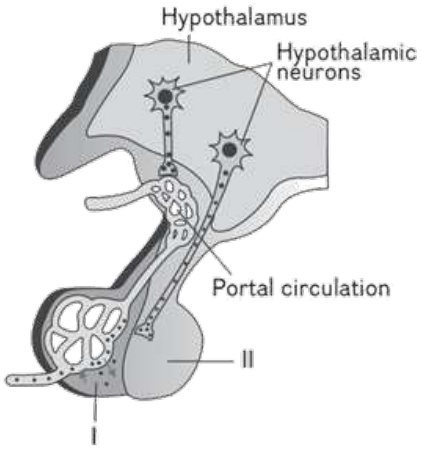
18. Portal circulatory system connect the _____ to the ____
(a) Hypothalamus, brain
(b) Hypothalamus, posterior pituitary
(c) hypothalamus, anterior pituitary
(d) Anterior pituitary, posterior pituitary

Topic 4 Pituitary Gland

19. The pituitary gland is a pea-shaped gland that lies in the hypophyseal fossa of
(a) sella turcica of the glenoid bone
(b) sella turcica of the sphenoid bone
(c) sella turcica of the parietal bone
(d) sella turcica of the frontal bone

20. The pituitary gland is connected to the hypothalamus by
(a) infundibulum (b) bony cavity
(c) hyaline cartilage (d) elastic cartilage

21. Following is the diagrammatic representation of the pituitary gland and its connection with the hypothalamus.



Select the correct option regarding the same.
(a) I: Anterior pituitary that is composed of neural tissues.
(b) I: Anterior pituitary that is composed of epithelial tissues.
(c) II: Posterior pituitary that is composed of epithelial tissues.
(d) II: Posterior pituitary that is composed of connective tissues.

22. In adults, adenohypophysis accounts for 75% of the total weight of the gland and consists of
(a) pars distalis
(b) pars tuberalis and pars intermedia
(c) pars nervosa
(d) pars intermedia

23. Which of the following hormone is secreted by pars intermedia?
(a) Prolactin
(b) Thyroid-stimulating hormone
(c) Adrenocorticotrophic hormone
(d) Melanocyte stimulating hormone

24. Which of the following statement is incorrect about the posterior pituitary?
(a) The posterior pituitary lobe is not a true endocrine gland.
(b) It serves as a hormone storage region.
(c) The posterior pituitary lobe and infundibulum together make neurohypophysis.
(d) Oxytocin and vasopressin hormones are synthesized in the posterior pituitary lobe.

25. Malfunctioning of endocrine gland deviates the body from homeostasis and causes several disorders. Which of the following disorder is correctly matched with its respective endocrine gland?
(a) Gigantism: Hyposecretion of growth hormone
(b) Dwarfism: Hypersecretion of growth hormone
(c) Acromegaly: Hypersecretion of growth hormone
(d) Gigantism: Hypersecretion of somatostatin

26. Hypersecretion of growth hormone in adults does not cause a further increase in height, because
(a) muscle fibers do not grow in size after birth.
(b) growth hormone becomes inactive in adults.
(c) epiphyseal plates close after adolescence.
(d) bones lose their sensitivity to growth hormone in adults.

27. A person is diagnosed with hypersecretion of growth hormone due to a pituitary tumor. Select the incorrect statement about his medical condition.
(a) Hypersecretion of growth hormone would cause hyperglycemia.
(b) There will be a reduced secretion of insulin.
(c) Insulin secretion would remain unaffected.
(d) Hypersecretion of growth hormone results in a diabetogenic effect.

28. Hypersecretion of prolactin hormone in females causes inappropriate lactation and absence of menstrual cycle. Based on the given information, select the pair of correct statements.
(a) Prolactin is required for milk ejection from mammary glands.
(b) The blood level of prolactin is increased just before menstruation.
(c) During pregnancy, prolactin inhibiting hormone suppresses the release of prolactin.
(d) Sucking action of newborn inhibits the release of PIH.
(a) A and B (b) B and C
(c) A and C (d) B and D

29. Select the option that correctly matches the hormone with its source endocrine gland and respective function/target organs.

	Hormone	Endocrine gland	Function/target organ
(A)	TSH	Anterior pituitary	All body cells
(B)	ACTH	Posterior pituitary	Stimulates secretion of glucocorticoids from the adrenal cortex
(C)	LH	Anterior pituitary	Triggers secretion of androgens in males
(D)	FSH	Posterior pituitary	Stimulates the growth of ovarian follicles

30. Which of the following set of hormones are called gonadotropins?
(a) GH and LH (b) LH and FSH
(c) LH and ACTH (d) FSH and TSH

31. The target cells/structures of FSH and LH in human males are
(a) interstitial cells and Sertoli cells respectively.
(b) Sertoli cells and interstitial cells respectively.
(c) interstitial cells only.
(d) Sertoli cells only.

32. LH is required for fertility in females because
(a) it maintains corpus luteum.
(b) it induces ovulation.
(c) it stimulates the release of FSH from corpus luteum.
(d) both (a) and (b).

33. Which of the following hormone is incorrectly matched with its target organ/cells?
(a) MSH: Melanocytes
(b) Oxytocin: Smooth muscles
(c) Vasopressin: Distal tubules of kidneys
(d) ADH: Glomerulus

34. Diuresis refers to
(a) loss of water through urine
(b) reduced loss of water through urine
(c) process of urine formation in nephrons
(d) contraction of muscles of the urinary bladder

35. Diabetes insipidus is caused by
(a) hyposecretion of insulin by the pancreas
(b) hyposecretion of ADH by the posterior pituitary
(c) increased sensitivity of kidneys for ADH
(d) hypersecretion of ADH by the posterior pituitary

36. Assertion: TSH stimulates the thyroid gland to secrete thyroid hormones.

Reason: The hormones of anterior pituitary that regulate the secretions of other endocrine glands are called tropic hormones.

(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

37. Assertion: Hyposecretion of growth hormone causes stunted growth in infants.

Reason: Epiphyseal plates are closed after the childbirth.

(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

38. Assertion: Hypersecretion of GH during childhood causes acromegaly.

Reason: The ADH regulates the fluid-electrolyte balance of the body.

(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

39. Assertion: ADH secretion is stimulated under the conditions of dehydration.

Reason: ADH prevents water loss from the body by decreasing the urine volume.

(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

Topic 5 Pineal Gland

40. Which of the following set of functions is not regulated by the hormone of the pineal gland?

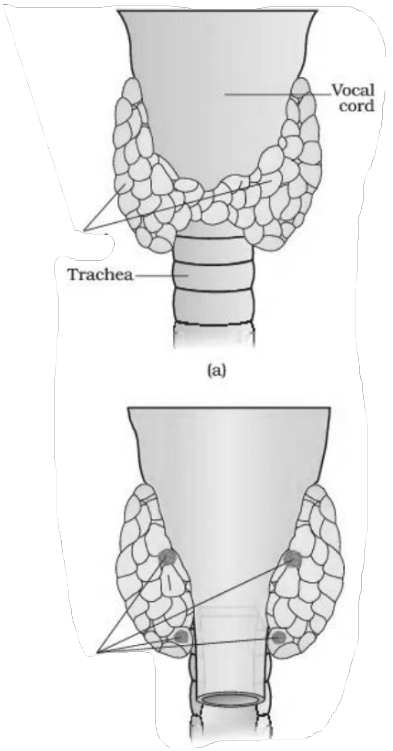
(a) Diurnal rhythm and body temperature
(b) Metabolism and pigmentation
(c) Growth of bones and defense capability
(d) Diurnal rhythm and defense capability

41. Which of the following hormone exhibits an anti-gonadotropic effect in humans?

(a) ADH (b) Thyroxin
(c) Melatonin (d) ACTH

Topic 6 Thyroid Gland

42. Following is the diagrammatic view of the position of endocrine glands.



Select the option that correctly labels the glands and their respective hormones.

(a) I - Thyroid gland - Thyroxine and TSH
(b) II - Parathyroid gland - PTH
(c) II - Thyroid gland - Thyroxine and calcitonin
(d) I - Parathyroid gland - PTH and calcitonin

43. The thyroid gland is composed of
(a) stromal tissues only
(b) follicles only
(c) stromal tissues and follicles
(d) isthmus

44. Most of the T_4 is converted into T_3 in the target tissues because
(a) T_4 is more active.
(b) T_3 is more active.
(c) T_4 has a shorter half-life.
(d) follicular cells cannot synthesize T_3.

45. Thyroid hormones are required for normal growth and development of humans because
(a) thyroid hormones increase the basal metabolic rate in most body tissues.
(b) thyroid hormones are regulated by negative feedback systems.
(c) thyroid hormones contain iodine atoms.
(d) thyroid hormones stimulate glycogen formation.

46. A group of tadpoles with no thyroxin hormone production exhibited disrupted metamorphosis. Which of the following statement correctly describes the role of thyroid hormones in metamorphosis?
(a) Thyroid hormones lower the blood calcium levels.
(b) Thyroid hormones increase blood calcium levels.
(c) Thyroid hormones lower the blood phosphate levels.
(d) Thyroxin stimulates protein synthesis.

47. Which of the following disorders of the endocrine system is incorrectly matched with its description?
(a) Hypothyroidism: Iodine deficiency
(b) Goitre: Enlarged thyroid gland
(c) Hyperthyroidism: Cretinism
(d) Exopthalmic goitre: Hyperthyroidism

48. Which of the given statement correctly differentiates Myxedema from Graves' disease?
(a) Hypothyroidism in adult ages causes Graves' disease.
(b) Graves' disease is more common among males than females.
(c) Myxedema causes swelling in facial tissues due to the accumulation of interstitial fluid.
(d) Myxedema is an auto-immune disorder.

49. Graves' disease is caused due to
(a) hyposecretion of the thyroid gland
(b) hypersecretion of the thyroid gland
(c) hyposecretion of the adrenal gland
(d) hypersecretion of the adrenal gland

50. Assertion: Thyroid hormones regulate oxygen consumption and basal metabolic rate of the body cells.

Reason: Thyroid hormones reduce the number of active mitochondria in body cells.
(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

Topic 7 Parathyroid Gland

51. The physiological role of parathyroid gland does not include
(a) increased activity of osteoclasts
(b) bone resorption
(c) reduced loss of Ca^{2+} and Mg^{2+} ions into urine
(d) reduced loss of HPO_4^{2-} into the urine

52. Which of the following hormones can play a significant role in osteoporosis?
(a) Aldosterone and Prolactin
(b) Progesterone and Aldosterone
(c) Estrogen and Parathyroid hormone
(d) Parathyroid hormone and Prolactin

53. Which of the following pairs of hormones have antagonistic effects?
(a) T_3 and T_4
(b) ACTH and glucocorticoids
(c) PTH and TCT (thyrocalcitonin)
(d) T_3 and TSH

54. Assertion: Calcitonin and PTH exhibit an antagonistic effect on blood levels of calcium ions.

Reason: Insulin and glucagon exhibit antagonistic effects on the blood levels of glucose.
(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

Topic 8 Thymus Gland

55. The endocrine gland that functions as a component of the lymphatic system is
(a) thyroid gland
(b) thymus gland
(c) parathyroid gland
(d) pineal gland

56. Which of the following endocrine gland is responsible for reduced immune responses in old ages?
(a) Thyroid gland (b) Pineal gland
(c) Thymus gland (d) Pituitary gland

Topic 9 Adrenal Gland

57. Adrenal cortex and adrenal medulla differ from each other in terms of
(a) histology (b) function
(c) origin (d) all of these

58. The endocrine gland present at the top of kidneys and involved in the fluidelectrolyte balance of the body is
(a) adrenal gland
(b) pineal gland
(c) parathyroid gland
(d) pancreas

59. Which of the following categories of hormones is correctly matched with its examples?
(a) Catecholamines: adrenaline and noradrenaline
(b) Emergency hormones: adrenaline and insulin
(c) Glucocorticoids: aldosterone
(d) Mineralocorticoids: cortisol

60. Consider the following statements:
(a) Some chemicals act as both neurotransmitters and hormones.
(b) Norepinephrine is released as a neurotransmitter by sympathetic division.
(c) Norepinephrine is released as a hormone by the thyroid gland.
(d) Norepinephrine is released as a hormone by the parathyroid gland.
Which of the two statements are correct?
(a) a and b (b) a and c
(c) b and c (d) c and d

61. Secretion of hormones from adrenal medulla is controlled by
(a) parasympathetic nervous system
(b) pituitary gland
(c) sympathetic nervous system
(d) peripheral nervous system

62. The fight or flight response generated by the release of hormones by adrenal medulla includes
(a) dilation of pupils and increased heart rate and blood pressure.
(b) glycogenolysis and lipid synthesis.
(c) increased muscular movement of the gastrointestinal tract.
(d) reduced blood glucose levels.

63. Which of the following hormones of the adrenal cortex are correctly matched with their source?
(a) Mineralocorticoids - Zona fasciculata cells
(b) Glucocorticoids - Zona glomerulosa cells
(c) Androgens - Zona glomerulosa cells
(d) Glucocorticoids - Zona fasciculata cells

64. Glucocorticoids are involved in
(a) fluid electrolyte balance
(b) carbohydrate metabolism
(c) water reabsorption from kidneys
(d) regulation of blood glucose levels

65. Which of the following sets of physiological functions correctly describes the role of cortisol in the human body?
(a) Anti-inflammatory response and suppression of the immune response
(b) Breakdown of RBCs in spleen
(c) Upregulation of uptake of amino acids
(d) Reabsorption of Na^+ from kidneys

66. Target organ/structure of aldosterone is
(a) renal calyces
(b) renal tubules
(c) glomerulus
(d) Bowman's capsule

67. Assertion: Adrenal medullary hormones regulate the fluid-electrolyte balance of the body.

Reason: Aldosterone is a mineralocorticoid that raises blood sodium levels.
(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

Topic 10 Pancreas

68. Which of the following pairs of endocrine glands are composite glands?
(a) Pancreas and thymus gland
(b) Adrenal glands and thymus gland
(c) Pancreas
(d) Adrenal gland and pineal gland

69. The cells that make about 70% of the cells of the pancreatic islets serve to secrete
(a) insulin
(b) glucagon
(c) somatostatin
(d) pancreatic polypeptide

70. Alpha and delta cells of pancreatic islands are the source of
(a) glucagon and insulin respectively
(b) somatostatin and glucagon respectively
(c) glucagon and somatostatin respectively
(d) insulin and glucagon respectively

71. Which of the following hormones is correctly matched with its description/effects?
(a) Hyperglycemic hormone: Glucagon
(b) Hypoglycemia: Glucagon
(c) Hypercalcemic hormone: Calcitonin
(d) Addison's disease: Catecholamines.

72. Which of the given statements correctly differentiates glycogenolysis from glycogenesis?
(a) Glycogenolysis is the formation of glycogen from glucose and is triggered by glucagon.
(b) Glycogenolysis is a breakdown of glycogen into glucose and is triggered by insulin.
(c) Glycogenesis is the conversion of glucose into glycogen and is stimulated by insulin.
(d) Glycogenesis is the formation of glucose from non-carbohydrate substrates.

73. Diabetes mellitus is a disorder of carbohydrate metabolism and is characterised by
(a) polyuria (b) polydipsia
(c) polyphagia (d) all of these

74. The water-soluble fuels that are normally exported by the liver but overproduced during fasting or diabetes mellitus when not treated are known as
(a) fatty acids (b) glucose
(c) ketone bodies (d) amino acids

75. Match the following hormones with the respective disease.

	Column-I		**Column-II**
(A)	Insulin	(1)	Addison's disease
(B)	Thyroxin	(2)	Diabetes Insipidus
(C)	Corticoids	(3)	Acromegaly
(D)	Growth hormone	(4)	Goitre
		(5)	Diabetes mellitus

Select the correct option.

	(A)	(B)	(C)	(D)
(a)	**5**	**1**	**2**	**3**
(b)	**2**	**4**	**3**	**1**
(c)	**5**	**4**	**1**	**3**
(d)	**2**	**4**	**1**	**3**

Topic 11 Testes

76. The _____ are the oval glands present in the scrotum and serve to secrete the hormones.
(a) ovaries and androgen
(b) testes and testosterone
(c) pineal gland and melatonin
(d) adrenal gland and cortisol

77. Which of the following is not a function of testes?
(a) Spermatogenesis
(b) Sperm production
(c) Testosterone secretion
(d) All of these

78. Which of the following structures/cells of testes is incorrectly matched with its functions?
(a) Seminiferous tubules - Spermatogenesis
(b) Sustentacular cells - Secretion of FSH
(c) Interstitial cells - Secretion of testosterone
(d) Sertoli cells - Nourishment of developing spermatogenic cells

79. Testes serve as an endocrine gland. Which of the given statement about testicular hormones is correct?
(a) LH from the posterior pituitary stimulates interstitial cells to secrete testosterone.
(b) Testosterone suppresses the secretion of LH and GnRH by the positive feedback mechanism.
(c) FSH and testosterone stimulate the sustentacular cells to stimulate the secretion of the androgen-binding protein.
(d) Testosterone stimulates the process of spermiogenesis.

80. The function of inhibin hormone is to
(a) inhibit the FSH secretion
(b) inhibit the testosterone secretion
(c) inhibit spermiogenesis
(d) stimulate spermatogenesis

81. The hormone responsible for the descent of testes into the scrotum is
(a) FSH (b) LH
(c) testosterone (d) inhibin

82. The function of testosterone in human males is/are
(a) development of male secondary sexual characters
(b) male sexual behaviour
(c) stimulation of protein breakdown
(d) both (a) and (b)

83. Assertion: In human males, LH is required for sperm production.

Reason: FSH and testosterone stimulate interstitial cells to secrete androgen binding

protein.

(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

Topic 12 Ovary

84. Androgens are responsible for libido in both human males and females. The source of androgens in human females is
(a) ovaries (b) adrenal gland
(c) corpus luteum (d) both (a) and (b)

85. Which of the following set of hormones is known as female sex hormones?
(a) FSH and LH
(b) Estrogen and progesterone
(c) FSH and estrogen
(d) LH and estrogen

86. Match the following structures in Column-I with the correct description in Column-II.

	Column-I		Column-II
(A)	Ovarian follicles	(1)	progesterone
(B)	Corpus luteum	(2)	LH
(C)	Graafian follicle	(3)	prolactin
(D)	Mammary glands	(4)	estrogen

Select the correct option.

	(A)	(B)	(C)	(D)
(a)	4	3	2	1
(b)	4	1	2	3
(c)	3	4	2	1
(d)	3	1	4	2

87. A temporary endocrine gland in the human body is
(a) pineal gland
(b) corpus cardiacum
(c) corpus luteum
(d) corpus allatum

88. Which of the following statement is incorrect about the effects and regulation of female sex hormones?
(a) Ovarian and uterine cycles are under the regulation of Gonadotropin releasing hormone.
(b) In females, FSH triggers the development of follicles.
(c) Ovarian follicles secrete estrogen under influence of FSH and LH.
(d) Estrogen from ovarian follicles is converted into progesterone.

89. Which of the following hormones regulates the formation of corpus luteum and stimulates it to release hormones?
(a) FSH (b) LH
(c) Estrogen (d) Androgens

90. Which of the following hormones is secreted by corpus luteum?
(a) Estrogens (b) Progesterone
(c) Relaxin (d) LH

91. Which of the following statements is incorrect?
(a) Testis and ovary function as a primary sex organ as well as endocrine gland
(b) Ovaries are located in thoracic cavity of females
(c) Ovary produces ovum, 2 groups of steroid hormones (estrogen and progesterone)
(d) Ovary is composed of ovarian follicles and stromal tissue

92. Which of the following hormone is synergistic to human growth hormone?
(a) Estrogen
(b) Progesterone
(c) Inhibin
(d) Androgen binding protein

93. After ovulation, the ruptured follicle is converted into-
(a) Graafian follicle
(b) Corpus callosum
(c) FSH
(d) LH

94. The hormone responsible to prepare and maintain endometrium for implantation of a fertilized ovum is:
(a) FSH (b) LH
(c) Progesterone (d) Inhibin

95. Assertion: Corpus luteum is a temporary endocrine gland.

Reason: Corpus luteum secretes female sex hormones.
(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

Topic 13 Hormones of Heart, Kidney and Gastrointestinal Tract

96. Atrial natriuretic factor (ANF) secreted by atrial wall of our heart has exactly the opposite function of this hormone secreted by zona glomerulosa.
(a) ADH (b) Aldosterone
(c) Androgen (d) Calcitonin

97. Match the hormones in Column-I with their functions in Column-II.

(A)	Progesterone	(1)	Inhibits uterine contraction
(B)	Atrial natriuretic factor	(2)	Formation of RBCs
(C)	Erythropoietin	(3)	Formation of alveoli (sac-like structures)
(D)	Relaxin	(4)	Lowers blood pressure

Select the correct option.

	(A)	(B)	(C)	(D)
(a)	4	3	2	1
(b)	4	1	2	3
(c)	3	4	2	1
(d)	2	1	4	3

98. ANF-
(a) decrease B.P.
(b) causes vasodilation
(c) is secreted when B.P. increases
(d) all of the above

99. Gastrin, secretin, cholecystokinin (CCK) and gastric inhibitory peptide (GIP) are 4 major peptide hormone secreted by-
(a) Only stomach
(b) Only small intestine
(c) Gastro-intestinal tract
(d) Only pancreas

100. Which of the following hormones of the gastrointestinal tract is wrongly matched with its function?

	Column-I		Column-II
(A)	Gastrin	(1)	Inhibition of gastric secretions
(B)	Gastric inhibitory peptide (GIP)	(2)	Stimulates secretion of pancreatic juice and bile juice
(C)	Secretin	(3)	Secretion of gastric juice
(D)	Cholecystokinin	(4)	Stimulates secretion of pancreatic juice

Select the correct option.

	(A)	(B)	(C)	(D)
(a)	3	1	4	2
(b)	2	1	4	3
(c)	3	4	2	1
(d)	2	4	4	1

101. Identify the hormone with its correct matching of source and function.

(a) Oxytocin - posterior pituitary, growth, and maintenance of mammary glands.

(b) Melatonin - pineal gland, regulates the normal rhythm of the sleep-wake cycle.

(c) Progesterone - corpus luteum, stimulation of growth and activities of female secondary sex organs.

(d) Atrial natriuretic factor - ventricular wall, increases the blood pressure.

102. Assertion: Hormones are also secreted by tissues that are not the endocrine glands.

Reason: Kidneys secrete the hormone atrial natriuretic factor.

(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.

(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

(c) Assertion is true, but Reason is false.

(d) Assertion is false, but Reason is true.

103. Assertion: Duodenum serves endocrine function and secretes secretin hormone.

Reason: Gastrin hormone from the mucosa of the stomach stimulates the secretion of gastric glands.

(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.

(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

(c) Assertion is true, but Reason is false.

(d) Assertion is false, but Reason is true.

Topic 14 | Mechanism of Hormone Action

104. Match the Column I with Column II.

	Column I		Column II
A.	Peptide, polypeptide protein	I.	Epinephrine, nor-epinephrine
B.	Steroid	II.	T_3 and T_4 (thyroid hormones)
C.	lodothyronines	III.	Cortisol, testosterone, estradiol, progesterone
D.	Amino acid derivatives	IV.	Pituitary hormones, pancreatic hormones, hypothalamic hormones

(a) A-I , B - II, C - III, D - IV

(b) A- IV, B - III, C - II, D - I

(c) A- IV, B – III, C - I, D - II

(d) A- I, B - II, C - IV, D - III

105. Steroid hormones initiate the production of target cell substances in which manner?

(a) They initiate second messenger activity

(b) They bind with membrane protein

(c) They initiate DNA transcription

(d) They activate enzyme pathways

106. Why do some hormones (first messenger) need to trigger a "second messenger" to activate a target cell?

(a) The first messenger needs activation of ATP

(b) The first messenger cannot cross a plasma membrane

(c) There are no specific cell surface receptors for first messenger

(d) The first messenger is not a water-soluble molecule

107. Which of the following category of hormones is incorrectly matched with its examples?

(a) Protein hormone: Insulin

(b) Steroids: Cortisol

(c) Iodothyronines: Thyroid hormones

(d) Amino-acid derivatives: Oxytocin

108. Which of the following categories of the hormones is water-insoluble?

(a) Eicosanoids (b) Peptide hormones

(c) Amines (d) Steroid hormones

109. Which of the following act as second messengers?
(a) cAMP (b) IP_3
(c) Ca^{+2} (d) All

110. Which of the following hormones does not act by a second messenger system?
(a) Glucagon (b) Epinephrine
(c) FSH (d) Testosterone

111. Which of the given sets of endocrine gland secrete/ release only water-soluble hormones?
(a) Pancreas and thyroid gland
(b) Parathyroid gland and pineal gland
(c) Adrenal gland and thyroid gland
(d) Parathyroid gland and pancreas

112. Epinephrine is _____ derivative.
(a) amino acid (b) carbohydrate
(c) steroid (d) nucleic acid

113. Which of the given hormones is incorrectly matched with its source amino acid?
(a) Serotonin: Tryptophan
(b) Histamine: Histidine
(c) Epinephrine: Tyrosine
(d) Melatonin: Alanine

114. The amino acid tryptophan is the precursor for the synthesis of
(a) estrogen and progesterone
(b) cortisol and cortisone
(c) melatonin and serotonin
(d) thyroxin and triiodothyronine

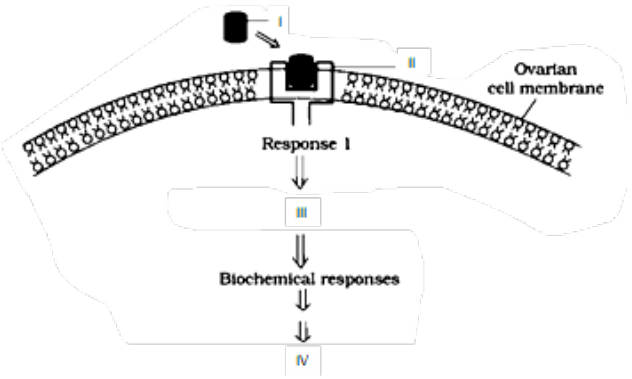
115. Which of the following statement correctly differentiate the transport of water-soluble and lipid soluble hormones in blood?
(a) Most of the lipid-soluble hormones are bound to transport proteins.
(b) Most of the water-soluble hormones are bound to transport proteins.
(c) Transport proteins enhance the rate of hormone loss in urine
(d) Transport proteins are synthesized in muscles.

116. Receptors for protein hormones are mostly present at/in
(a) nucleus (b) nuclear envelop
(c) cell surface (d) cytoplasm

117. Which of the given statement is correct about the mechanism of water soluble hormones?
(a) Hormones bind to their cytoplasmic receptors present in the target cells.
(b) The hormone-receptor complex alters the gene expression.
(c) Hormones serve as the first messenger and cause the production of a second messenger.
(d) The newly formed proteins produce a physiological response.

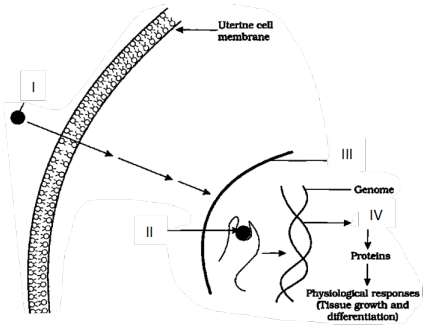
118. Which of the following molecules serve as the second messenger in the mechanism of action of a protein hormone?
(a) T_3 (b) cAMP
(c) T_4 (d) protein kinases

119. Following is the diagrammatic representation of the mechanism of action of a protein hormone. Which of the given options correctly describes the labeled events?



(a) I-hormone receptor
(b) II-hormone
(c) III-second messenger
(d) IV-physiological response

120. Following is the diagrammatic representation of the mechanism of action of a steroid hormone. Which of the given options correctly describes the labeled events?



(a) I-Hormone, II-second messenger
(b) I-Hormone, III-nucleus
(c) II-Hormone-receptor complex, IVDNA
(d) II-Second messenger, IV-mRNA

121. Assertion: Aldosterone can diffuse freely through the lipid bilayer.
Reason: Steroid hormones are lipid-soluble.
(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion. (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

122. Assertion: Receptors for steroid hormones are present at the cell surface.
Reason: Receptors for protein hormones are present inside the nucleus.
(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

123. Assertion: cAMP serves as the second messenger for protein hormones.
Reason: Insulin is a protein hormone.
(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

ANSWER KEY

1. (b)	2. (c)	3. (d)	4. (a)	5. (b)	6. (a)	7. (c)	8. (a)	9. (d)	10. (d)
11. (b)	12. (b)	13. (c)	14. (b)	15. (c)	16. (d)	17. (b)	18. (c)	19. (b)	20. (a)
21. (a)	22. (a)	23. (d)	24. (d)	25. (c)	26. (c)	27. (c)	28. (b)	29. (c)	30. (b)
31. (b)	32. (d)	33. (d)	34. (a)	35. (b)	36. (a)	37. (c)	38. (d)	39. (a)	40. (c)
41. (c)	42. (b)	43. (c)	44. (b)	45. (a)	46. (d)	47. (c)	48. (c)	49. (b)	50. (c)
51. (d)	52. (c)	53. (c)	54. (b)	55. (b)	56. (c)	57. (d)	58. (a)	59. (a)	60. (a)
61. (c)	62. (a)	63. (d)	64. (b)	65. (a)	66. (b)	67. (d)	68. (c)	69. (a)	70. (c)
71. (a)	72. (c)	73. (d)	74. (c)	75. (c)	76. (b)	77. (d)	78. (b)	79. (c)	80. (a)
81. (c)	82. (d)	83. (c)	84. (d)	85. (b)	86. (b)	87. (c)	88. (d)	89. (b)	90. (b)
91. (b)	92. (a)	93. (b)	94. (c)	95. (a)	96. (b)	97. (c)	98. (d)	99. (c)	100. (a)
101. (b)	102. (c)	103. (d)	104. (b)	105. (c)	106. (b)	107. (d)	108. (d)	109. (d)	110. (d)
111. (b)	112. (a)	113. (d)	114. (c)	115. (a)	116. (c)	117. (c)	118. (b)	119. (c)	120. (b)
121. (a		b)							