



BIOLOGY

BOOKS - TRUEMAN BIOLOGY

CHEMICAL COORDINATION AND INTEGRATION

Multiple Choice Questions

1. One similarity between enzyme and hormones is that both
- A. are proteins
 - B. act at a wide range of pH
 - C. are used in minute amount
 - D. can be used again and again

Answer: C



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2. Hormones differ from enzymes in that they are

- A. found only in plants
- B. found only in animals
- C. often used up in metabolism
- D. not used up in metabolism

Answer: C



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3. Relaxin is chemically

- A. steroid
- B. protein
- C. carbohydrate
- D. both (1) and (3)

Answer: B

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4. Which is the following hormones attach on a specific receptor site on plasma membrane ?

- A. Oestrogen
- B. Thyroxine
- C. Epinephrine
- D. All of these

Answer: C

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5. Which of the following hormones utilize cAMP as a second messenger ?

- A. Estrogen
- B. Aldosterone
- C. Progesterone
- D. None of these

Answer: D

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6. In heart cells, which one serves as a second messenger, speeding up muscle cell contraction in response to adrenaline ?

- A. GTP
- B. ATP
- C. cAMP
- D. AMP

Answer: C

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7. Which of the following enzymes is related with hormonal activity ?

- A. Arginase

B. Adenylcyclase

C. Cholinesterase

D. All of these

Answer: B



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8. Which is not involved as second messenger in Ca^{2+} mediated hormone ?

A. IP^3

B. DG

C. $cAMP$

D. Phospholipase

Answer: C

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9. Insuline receptors are

- A. G - protein
- B. Cytoplasmic protein
- C. Membrane protein
- D. Trimeric protein

Answer: C

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10. Which of these correctly describes the role of inositol triphosphate in hormone action ?

A. It activates adenylatecyclase

B. It simulates the release of Ca^{2+} from endoplasmic reticulum

C. It activates protein kinase

D. All of the above

Answer: B

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11. Pituitary gland is derived from

A. ectoderm

B. endoderm

C. mesoderm

D. None of these

Answer: A



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12. Both ectoderm and mesoderm contribute in the development of

A. thyroid

B. adrenal

C. pancreas

D. None of these

Answer: B

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13. The number of hormones secreted by anterior pituitary is

A. 3

B. 4

C. 7

D. 8

Answer: C

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14. The function of ACTH is to

- A. stimulate adrenal medulla
- B. stimulate adrenal cortex
- C. stimulate pituitary
- D. all of these

Answer: B



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15. If pituitary is surgically removed, blood level of sodium falls and that of potassium rises due to

- A. atrophy of adrenal cortex
- B. atrophy of adrenal medulla
- C. fact that ADH from pituitary is no longer available
- D. fact that TSH from pituitary is no longer available

Answer: A



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16. Growth hormone

- A. increases sodium and water retention
- B. increases the breakdown of lipids
- C. decreases the synthesis of proteins
- D. decreases rate of cell division

Answer: B



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17. Which of these hormones stimulates somatomedin secretion ?

A. GH

B. LH

C. FSH

D. TSH

Answer: A



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18. Which one of the following pituitary hormones does not have a target gland to act upon ?

A. Thyrotropin

B. Somatotropin

C. Gonadotropin

D. Adrenocorticotropin

Answer: B



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19. Hypersecretion of growth hormone

A. increases the probability that one will develop diabetes

B. results in gigantism if it occurs in children

C. causes acromegaly in adults

D. All of the above

Answer: D

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20. Acromegaly is a disease caused by

- A. over secretion of growth hormone in adulthood
- B. over secretion of growth hormone in childhood
- C. under secretion of growth hormone in adulthood
- D. under secretion of growth hormone in childhood

Answer: A

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21. Select the false statement

- A. T_4 is the chief circulating form of thyroid hormone, but is less active than T_3
- B. Acromegaly is usually associated with hypoglycemia and hypotension
- C. Thyroxine promotes the body growth and metamorphosis in amphibians
- D. Hypothalamus produces the hormone concerned with milk ejection

Answer: B

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22. Hormone prolactin is secreted by

- A. neurohypophysis

B. hypothalamus

C. anterior pituitary

D. posterior pituitary

Answer: C



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23. MSH is secreted by

A. hypothalamus

B. pars nervosa

C. parstuberalis

D. pars intermedia

Answer: D

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24. Which of the following secretes hormones with the help of neurosecretory axons ?

- A. Pineal gland
- B. Adrenal cortex
- C. Anterior pituitary
- D. posterior pituitary

Answer: D

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25. Which of the following hormones are produced in the hypothalamus and stored in the posterior pituitary ?

A. FSH and LH

B. TSH and STH

C. ACTH and MSH

D. ADH and oxytocin

Answer: D

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26. Match item in Column A with those given in Column B

Column A	Column B
A. ADH	1. Pituitary
B. ACTH	2. Mineralocorticoid
C. Aldosterone	3. Diabetes mellitus
D. Insulin	4. Diabetes insipidus
E. Adrenaline	5. Vasoconstrictor

A. A = 1, B = 4, C = 2, D = 3, E = 5

B. $A = 4, B = 2, C = 1, D = 3, E = 5$

C. $A = 4, B = 1, C = 2, D = 3, E = 5$

D. $A = 4, B = 1, C = 2, D = 2, E = 5$

Answer: C



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27. Alcohol inhibits the secretion of

A. ADH

B. Insulin

C. Oxytocin

D. Progesterone

Answer: A

28. Match the hormone in the List I with function in the List II and choose the correct alternative

List I (Hormone)	List II (Function)
A. Vasopressin	1. Stimulation of uterine contraction
B. ACTH	2. Testosterone production
C. Oxytocin	3. Antidiuresis
D. Prolactin	4. Stimulation of milk production
E. ICSH	5. Adrenal cortex stimulation

A. A = 1, B = 3, C = 4, D = 2, E = 5

B. A = 3, B = 5, C = 1, D = 4, E = 2

C. A = 3, B = 2, C = 1, D = 5, E = 4

D. A = 4, B = 5, C = 2, D = 1, E = 3

Answer: B



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29. Abnormal rise in oxytocin level in a pregnant female may cause

- A. abortion
- B. high blood pressure
- C. increased ventilation
- D. increased synthesis of milk

Answer: A



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30. Point out the odd one

A. Prolactin

B. Vasopressin

C. Corticotropin

D. Noradrenaline

Answer: D



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31. Column I lists the endocrine structure and Column II lists corresponding hormones. Match the two columns and identify

the correct option from those given

Column I	Column II
A. Hypothalamus	p. Oxytocin
B. Anterior pituitary	q. Estrogen
C. Testis	r. FSH and LH
D. Ovary	s. Androgens
	t. Gonadotropin releasing hormones

A. A = t, B = r, C = s, D = q

B. A = t, B = r, C = q, D = s

C. A = p, B = q, C = s, D = r

D. A = r, B = t, C = s, D = q

Answer: A



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32. Which of these hormones is not secreted into the hypothalamohypophysial portal system ?

A. PIH

B. ADH

C. GHRH

D. GnRH

Answer: B



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33. Which pair is tyrosine derivative ?

A. FSH and GH

B. Insulin and Glucagon

C. Calcitonin and Thyroxine

D. Thyroxine and Adrenaline

Answer: D



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34. Which gland stores its hormones before their release.

A. Pineal

B. Thyroid

C. Pancreas

D. Pituitary

Answer: B



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35. Increase in BMR is due to

- A. thyroxine
- B. adrenaline
- C. calcitonin
- D. parathormone

Answer: A



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36. Which hormone produces calorogenic effect ?

- A. FSH
- B. Calcitonin

C. Thyroxine

D. All of these

Answer: C



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37. Choose the correct statement.

A. During the time of stress, cortisol acts as an anabolic hormone in muscle and adipose tissue

B. The posterior pituitary is connected to hypothalamus by a portal system

C. Prolonged lack of iodine has a significant effect on thyroxine secretion

D. Injection of calcitonin causes hypercalcemia

Answer: C



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38. Which of these occurs as a response to a thyroidectomy ?

- A. Decreased TRH secretion
- B. Increases TRH secretion
- C. Increased calcitonin secretion
- D. Increased T_3 and T_4 secretion

Answer: B



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39. The secretion of which of these hormones would be increased in a person with endemic goitre ?

- A. TSH
- B. Thyroxine
- C. Triiodothyronine
- D. All of these

Answer: A

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40. Which one of the following pairs is mismatched ?

- A. Hypocortisolism - Cretinism
- B. Hypothyroidism - Myxoedema

C. Hypercortisolism - Cushing's syndrome

D. Hyperthyroidism - Exophthalmic goitre

Answer: A



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41. Parafoollicular cells of thyroid secrete

A. calcitonin

B. thyroxine

C. thyroglobin

D. parathormone

Answer: A



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42. Which of the following statements are false / true

(A) Calcitonin regulates the metabolism of calcium

(B) Oxytocin stimulates contraction of uterine muscles during birth

(C) Grave's disease is caused by malfunctioning of adrenal gland

(D) ADH stimulates absorption of water and increase the urine productions

A. A, B and C are true, D only false

B. A only true, B, C and D are false

C. A and D are false, B and C are true

D. A and B are true, C and D are false

Answer: D



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43. Parathormone is also known as

- A. Calciferol
- B. Birth hormone
- C. Collip's hormone
- D. langerhans hormone

Answer: C



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44. Increase in bleeding time and delay in blood coagulation is due to the deficiency of which hormone?

- A. thyroxine
- B. Adrenaline

C. Noradrenaline

D. parathormone

Answer: D



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45. Calcium level is not regulated by

A. Vitamin D

B. Thyroxine

C. Calcitonin

D. Collip's hormone

Answer: B



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46. Which of these statements about the adrenal cortex is true ?

- A. It secretes some androgens
- B. The zona secretes aldosterone
- C. The zona glomerulosa is stimulated by ACTH
- D. All of the above are true

Answer: D



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47. Glomerular area of adrenal cortex is mainly responsible for

- A. maintaining glucose levels
- B. carbohydrate metabolism

C. water and electrolyte balance

D. steroid and hormone secretion

Answer: C



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48. If aldosterone secretion increases

A. Acidosis results

B. blood volume increases

C. blood sodium levels decreases

D. blood potassium levels increases

Answer: B



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49. Hyperglycemia is induced by all the following hormones except

A. glucagon

B. thyroxine

C. aldosterone

D. glucocorticoid

Answer: C

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50. Which of the following hormones has no control over gluconeogenesis ?

A. insulin

B. Glucagon

C. Vasopressin

D. Corticosterone

Answer: C



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51. Which hormone possesses anti-insulin effect ?

A. Cortisol

B. Calcitonin

C. Oxytocin

D. Aldosterone

Answer: A

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52. Hormone useful in suppressing allergies, rheumatoid arthritis and tissue inflammation is

- A. thyroxine
- B. adrenaline
- C. glucocorticoid
- D. mineralocorticoid

Answer: C

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53. Disease caused by undersecretion of adrenal cortex

- A. sterility
- B. Cretinism
- C. Dwarfism
- D. Addison's disease

Answer: D

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54. Excess of which of the following hormones causes Cushing's syndrome ?

- A. thyroxine
- B. Adrenaline
- C. Noradrenaline
- D. Cortisol

Answer: D

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55. Which is not a symptom of Cushing's syndrome ?

- A. Suppressed immune function
- B. Hypertension
- C. Bone loss
- D. Hypovolemia

Answer: D

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56. The excessive secretion of mineralocorticoids independent of renin - angiotensin - aldosterone system results in

- A. Grave's disease
- B. Conn's syndrome
- C. Addison's disease
- D. Tetany

Answer: B



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57. Melatonin is secreted by

- A. pineal
- B. pituitary

C. thymus

D. adrenal cortex

Answer: A



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58. The 24 hour (diurnal) rhythm of our body such as the sleep-wake cycle is regulated by the hormone

Or

Which hormone is secreted more in dark condition

A. Insulin

B. Melatonin

C. Thyroxine

D. Adrenaline

Answer: B

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59. The function of pineal body is to

- A. regulates the period of puberty
- B. maintains sleep awake cycle
- C. lighten the skin colours
- D. all of the above

Answer: D

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60. Which of the following endocrine gland functions as a biological clock and neurosecretory transducer ?

- A. Pineal gland
- B. Thymus gland
- C. Adrenal gland
- D. Pituitary gland

Answer: A

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61. Which of these hormones may have a primary role in many circadian [24 hour-diumal] rhythms ?

- A. Insulin

B. Estradiol

C. Melatonin

D. Epinephrine

Answer: C



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62. If thymus gland of an infant is removed which of the following will not form

A. Monocytes

B. Eosinophils

C. B-lymphocytes

D. T-lymphocytes

Answer: D



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63. Hypersecretion of glucagon may cause

- A. Hypoglycemia
- B. glycosuria
- C. Hypertension
- D. diabetes insipidus

Answer: B



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64. Insuline increases

- A. breakdown of fats
- B. breakdown of protein
- C. breakdown of glycogen in liver
- D. uptake of glucose by its target tissues

Answer: D



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65. Alloxan treatment destroys

- A. STH cells
- B. Cells of Leydig
- C. Beta cells of Islets of Langerhans
- D. Alpha cells of Islets of Langerhans

Answer: C

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66. Match the hormones listed under column I with their functions listed under column II. Choose the answer which gives the correct combination of the alphabets of the two columns

Column I	Column II
A. Oxytocin	p Stimulates ovulation
B. Prolactin	q Implantation and maintenance of pregnancy
C. Luteinising hormone	r Lactation after childbirth
D. Progesterone	s Uterine contraction during labour
	t Reabsorption of water by nephrons

A. A = s, B = q, C = r, D = t

B. $A = t, B = r, C = p, D = s$

C. $A = s, B = r, C = p, D = q$

D. $A = t, B = p, C = s, D = r$

Answer: C



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67. Study the following table

	Endocrine gland	Hormone	Deficiency disorder
A	Neurohypophysis	Vasopressin	Diabetes insipidus
B	Adrenal cortex	Corticosteroids	Addison's disease
C	Parathyroid glands	Parathormone	Myxoedema
D	Thyroid gland	Calcitonin	Acromegaly

A. B and C

B. A and B

C. C and D

D. A and D

Answer: B

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68. Match List I and List II and select the correct option

List I		List II	
A	Adrenaline	1.	Myxoedema
B	Hyperparathyroidism	2.	Accelerates heartbeat
C	Oxytocin	3.	Saltwater balance
D	Hypothyroidism	4.	Childbirth
E	Aldosterone	5.	Demineralization

A. A = 3, B = 4, C = 5, D = 3, E = 2

B. A = 5, B = 3, C = 2, D = 4, E = 1

C. $A = 2, B = 5, C = 4, D = 1, E = 3$

D. $A = 2, B = 3, C = 4, D = 5, E = 1$

Answer: C

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69. Obesity of face, hyperglycemia and virilism in females are characteristics of

A. Grave's disease

B. Myxoedema

C. Cushing's syndrome

D. Addison's disease

Answer: C

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70. The genetic deficiency of ADH - receptor leads to

- A. Glycosuria
- B. Diabetes mellitus
- C. Addison's disease
- D. diabetes insipidus

Answer: D

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71. Which of the following hormones is not a steroid ?

- A. Vasopressin

B. Testosterone

C. Androgen

D. Aldosterone

Answer: A

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72. Match the hormone with its source of secretion

A. Somatostatin	1. Pineal gland
B. Melatonin	2. Corpus luteum
C. Aldosterone	3. Placenta
D. Progesterone	4. Adrenal cortex
E. HCG	5. Islet of Langerhans
	6. Adenohypophysis

A. A = 5, B = 1, C = 6, D = 3, E = 2

B. A = 1, B = 2, C = 4, D = 3, E = 5

C. A = 5, B = 1, C = 4, D = 2, E = 3

D. A = 2, B = 6, C = 4, D = 5, E = 3

Answer: C

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73. Match List I with List II and choose the correct answer

List I		List II	
A	Hypothalamus	1.	Sperm lysins
B	Acrosome	2.	Estrogen
C	Graafian follicle	3.	Relaxin
D	Leydig cells	4.	GnRH
E	Parturition	5.	Testosterone

A. A = 4, B = 1, C = 2, D = 3, E = 5

B. A = 2, B = 1, C = 5, D = 3, E = 5

C. A = 2, B = 1, C = 5, D = 4, E = 3

D. A = 4, B = 1, C = 2, D = 5, E = 3

Answer: D



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74. Which of the following hormones is correctly matched with its deficiency disease ?

- A. Parathormone - Tetany
- B. Relaxin - Cretinism
- C. Insulin - Diabetes insipidus
- D. Prolactin - Astigmatism

Answer: A



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75. Parathormone influences calcium absorption in the small intestine by regulating the metabolism of

- A. Vitamin - C
- B. Vitamin - D
- C. Vitamin - B_6
- D. Enterogastrone

Answer: B

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76. The inability to regulate the concentration of sodium ions in the blood could be due to the improper functioning of one of the following

- A. Pars nervosa : It produces ADH
- B. Adenohypophysis : It produces TSH
- C. Adrenal cortex - It produces aldosterone
- D. Adrenal medulla : It produces epinephrine

Answer: C



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77. Select the correct matched pair

- A. Pineal gland - does not influence menstrual oxytocin
- B. Corpus luteum - secretes oxytocin
- C. Interstitial cells - erythropoietic
- D. Cholecystokinin - stimulates contraction of gall bladder

Answer: D

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78. Medullary thyroid carcinoma is a type of thyroid cancer that occurs in the parafollicular cells. Which of the following can be used as a tumor marker in order to identify medullary carcinoma ?

- A. Thyroid hormone
- B. Cell membrane receptors
- C. Abnormal rate of cellular division
- D. Calcitonin

Answer: D

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79. Find out the correct match

Hormone	Gland	Function
(1) Thyroxine	Thyroid gland	Decreases basal metabolic rate
(2) Glucagon	β -cells of pancreas	Stimulates glycogenolysis resulting in an increased blood sugar
(3) Calcitonin	Thyroid gland	Decreases blood calcium levels
(4) Glucocorticoids	Adrenal medulla	Stimulate gluconeogenesis, lipolysis and proteolysis

A. N/A

B. N/A

C. N/A

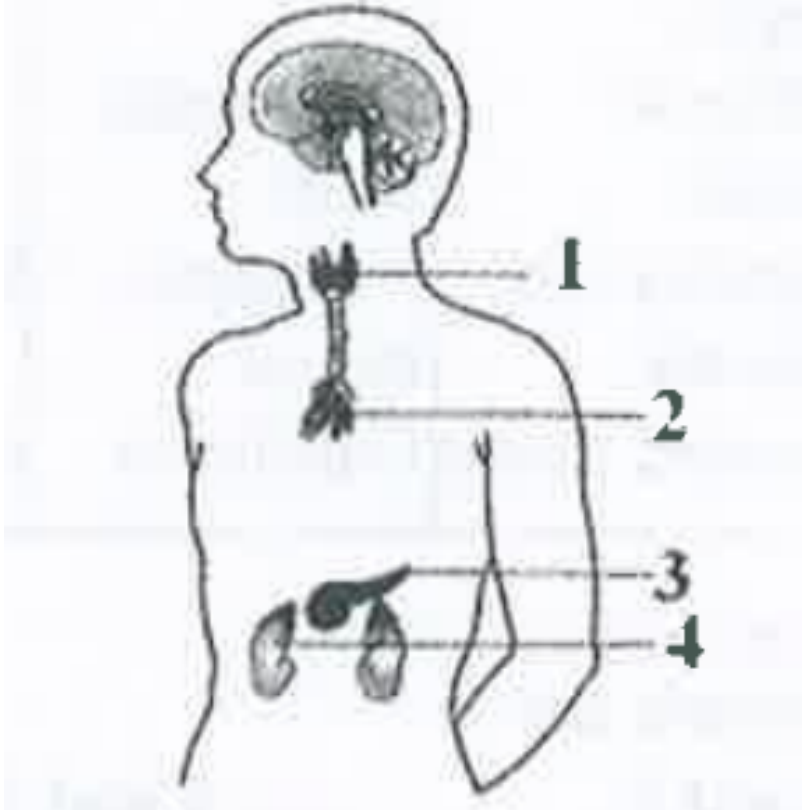
D. N/A

Answer: C



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80. Given is the figure showing location of a few endocrine glands.



choose the one correct match

- | | | | |
|----|----|-------------|-----------------------------|
| A. | No | Gland | Associated with |
| | 1 | Pineal | Humoral immunity |
| B. | No | Gland | Associated with |
| | 2 | Parathyroid | Calcium metabolism |
| C. | No | Gland | Associated with |
| | 3 | Pancreas | Fight and Flight |
| D. | No | Gland | Associated with |
| | 4 | Adrenal | secondary sexual characters |

Answer: D



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81. Find the correct match

- A. Parathormone - Ca^{+} metabolism (action)
- B. ADH - Diabetes mellitus (disease)
- C. Glucagon - ' α ' cells (Source)
- D. Progesterone - Corpus Luteum (Source)

Answer: B



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82. Consider the following hormones

- (i) Antidiuretic hormone
- (ii) Aldosterone

(iii) Parathormone (v) Oxytocin

In the vertebrate animals, the hormones involved in the control of osmoregulation would include

- A. (i), (ii), (iii) and (iv)
- B. (i), (ii) and (iii)
- C. (i) and (ii)
- D. (iii) and (iv)

Answer: C



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83. Match list - I with list - II and select the correct answer using the code given below the lists

List-I	List-II
A. LH	1. Suppression of growth hormone
B. Somatostatin	2. Dispersion of melanin
C. Melatonin	3. Formation of corpora lutea
D. MSH	4. Antigonadal action

A. *A B C D*
3 1 4 2

B. *A B C D*
3 1 2 4

C. *A B C D*
1 3 4 2

D. *A B C D*
1 3 2 4

Answer: A



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84. Match list - I with list - II and select the correct answer using codes given below the lists

List-I	List-II
A. Xerophthalmia	1. ACTH
B. Tetany	2. Vitamin-A
C. Beriberi	3. Vitamin-B ₁
D. Cushing's disease	4. Parathyroid
	5. Vitamin-B ₂

- A. *A B C D*
2 3 1 4
- B. *A B C D*
2 4 3 1
- C. *A B C D*
2 5 3 1
- D. *A B C D*
4 5 2 3

Answer: B



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85. Match list - I (Organ) with list - II (Hormone) and select the correct answer using the codes given below the lists

List-I	List-II
A. Adenohypophysis	1. Ecdysone
B. Ovary	2. Glucagon
C. Prothoracic gland	3. Luteinising hormone
D. Alpha cells of islets of Langerhans	4. Insulin
	5. Progesterone

A. *A B C D*
3 5 1 2

B. *A B C D*
3 4 1 2

C. *A B C D*
1 3 4 4

D. *A B C D*
4 3 5 2

Answer: A

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86. Which one of the following pairs is not - correctly matched ?

- A. Pineal body : Dopamine
- B. Leydig cells : Androgen
- C. Intestine : Secretin
- D. Neurohypophysis : Oxytocin

Answer: A



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87. Match list - I (hormones) with list - II (effect) and select the correct answer using the codes given below the lists

List-I (Hormones)	List-II (Effect)
A. Melatonin	1. Loosening of pelvic ligaments.
B. Relaxin	2. Influences the activity of ovary.
C. MSH	3. Pigment dispersal in melanophores
D. STH	4. Synthesis and release of Glucocorticoids
	5. Metabolism of proteins and fat.

A. *A B C D*
2 1 4 3

B. *A B C D*
1 2 3 5

C. *A B C D*
1 2 4 3

D. *A B C D*
2 1 3 5

Answer: D



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88. Consider the following

1. Vasopressin deficiency
2. Insulin deficiency
3. Vasopressin hypersecretion

Which of the above causes polyuria ?

- A. 1 only
- B. 1 and 2
- C. 3 only
- D. 2 and 3

Answer: B



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89. Consider the following

1. AdenylCyclase
2. Inositol 1, 4, 5-triphosphate
3. cAMP
4. Catecholamine

Which of the above is/are second messengers ?

- A. 1, 3 and 4
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2, 3 and 4

Answer: B



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90. Steroid hormones

- A. Pass easily through cell membranes to act in the cell
- B. Include testosterone, estrogen, and growth hormone
- C. Are only produced in the pituitary gland
- D. Stimulate liver cells to convert glucose to glycogen

Answer: A



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91. Hormones that are hydrophobic show delay in initial action and capable of altering gene expression are

- A. Peptides
- B. Steroids

C. Catecholamines

D. Thyroid hormones

Answer: B



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92. Osteoporosis results from lesser calcium in bones. This may be due to

- A. hyperactivity of both adrenal cortex and parathyroid glands
- B. hypoactivity of both adrenal cortex and parathyroid glands
- C. hypoactivity of adrenal cortex and hyper activity of parathyroid gland
- D. hyperactivity of adrenal cortex and hypoactivity of parathyroid gland

Answer: A



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93. As part of a student project, Sheela surgically made a full cut in the hypothalamo - hypophyseal tract in pregnant rabbits and studied the physiological effects on different tissues/organs.

Which of the following should be expected ?

- (i) Formation of large volume of dilute urine
- (ii) Increased blood sugar levels
- (iii) increased heart rate
- (iv) Difficulty in parturition

A. (i) and (ii)

B. (ii) and (iii)

C. (iii) and (iv)

D. (i) and (iv)

Answer: D



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94. Decrease aldosterone level leads to increase in blood

A. pressure

B. Glucose

C. Potassium

D. All of the above

Answer: C



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95. Transaction of pituitary stalk leads to increase in

- A. TSH
- B. Prolactin
- C. GH
- D. ACTH

Answer: B



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96. Anabolic hormones are all except

- A. Cortisol
- B. Testosterone
- C. Growth hormone

D. Insulin

Answer: A



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97. The metabolism of glucose is regulated by a complex orchestration of hormones. All of the following endocrine products increase blood glucose concentration except

A. Epinephrine

B. Glucagon

C. Calcitonin

D. Cortisol

Answer: C



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98. Which of the following methods can be used to obtain a definitive diagnosis of type I insulin-dependent diabetes ?

- A. Detecting the presence of islet cell antibodies
- B. Performing an insulin receptor count
- C. Testing for elevated blood sugar concentration
- D. Screening individuals for obesity

Answer: A



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99. Which of the following is the main activating factor of aldosterone secretion during periods of dehydration ?

- A. ACTH
- B. Sympathetic nervous system
- C. Renin
- D. Spontaneous adrenal release

Answer: C

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100. Insulinoma is a common tumor of the endocrine pancreas that presents with excessive insulin secretion. Which of the following is an effect of insulinoma on the body?

- A. Hyperglycemia
- B. Low glycogen levels
- C. Decreased protein synthesis

D. Increased rate of glycolysis

Answer: D



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101. Vasopressin analogs that inhibit the synthesis of ADH would most likely work at which of the following sites ?

- A. Collecting duct
- B. Anterior pituitary
- C. Posterior pituitary
- D. Hypothalamus

Answer: D



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102. An uncontrolled diabetic patient may occasionally have glucose appear in the urine. Which of the following statements is the best explanation for this phenomenon ?

- A. High plasma levels of glucose cause glucose to be secreted by the proximal tubule.
- B. The kidney is a significant site for glucose synthesis, which causes glucose to occasionally appear in urine
- C. The high concentration of glucose saturates the reabsorption pumps, causing glucose to appear in the urine
- D. The vasa recta transports glucose into urine.

Answer: C



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103. Accidental pituitary stalk damage will cause all except

- A. Diabetes mellitus
- B. Diabetes insipidus
- C. Hypothyroidism
- D. Addison's disease

Answer: A



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104. A dopamine tract from the hypothalamus plays an important role in regulating the release of prolactin. All of the following are true regarding prolactin except

- A. It is produced by the anterior pituitary gland

B. It stimulates milk production

C. Secretion is inhibited by dopamine

D. It is produced in the same area as oxytocin

Answer: D



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105. Select the right match of endocrine gland and their hormones among the options given below

- A. Pineal (i) Epinephrine
B. Thyroid (ii) Melatonin
C. Ovary (iii) Estrogen
D. Adrenal medulla (iv) Tetraiodothyronine

A. A - (iv), B - (ii), C - (iii), D - (i)

B. A - (ii), B - (iv), C - (i), D - (iii)

C. A - (iv), B - (ii), C - (i), D - (iii)

D. A - (ii), B - (iv), C - (iii), D - (i)

Answer: D



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106. Listed below are the hormones of anterior pituitary origin.
Tick the wrong entry.

A. Growth hormone

B. Follicle stimulating hormone

C. Oxytocin

D. Adrenocorticotrophic hormone

Answer: C



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107. Choose the correct answer among the following options:

- | | |
|-----------------------------|---|
| A Epinephrine | i Increase in muscle growth |
| B Testosterone | ii Decrease in blood pressure |
| C Glucagon | iii) Decrease in liver glycogen content |
| D Atrial natriuretic factor | iv Increase heart beat |

A. A - (ii), B - (i), C - (iii), D - (i)

B. A - (iv), B - (i), C - (iii), D - (ii)

C. A - (i), B - (ii), C - (iii), D - (iv)

D. A - (i), B - (iv), C - (ii), D - (iii)

Answer: B

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108. One of the following conditions is not linked to deficiency of thyroid hormones

A. Cretinism

B. Goitre

C. Myxoedema

D. Exophthalmos

Answer: D



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109. A person passes much urine and drinks much water but his blood glucose level is normal. This condition may be the result of

A. A reduction in insulin secretion from pancreas

B. A reduction in vasopressin secretion from posterior pituitary

C. A fall in the glucose concentration in urine

D. An increase in secretion of glucagons

Answer: B



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110. The source of somatostatin is same as that of

A. Thyroxine and calcitonin

B. Insulin and Glucagon

C. Somatotropin and prolactin

D. Vasopressin and thyroxine

Answer: B



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111. Assertion : Diabetes insipidus is marked by excessive urination and too much thirst for water .

Reason : Anti-diuretic hormone (ADH) is secreted by the posterior lobe of pituitary gland .

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion, then mark a.
- B. If both Assertion and Reason are true but the Reason is not the correct explanation of the Assertion, then mark a.
- C. If Assertion is true statement but Reason is false, then mark c.
- D. If both Assertion and Reason are false statements, then mark d.

Answer: B



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112. Which one of the following four glands is correctly matched with the accompanying description

- A. Thyroid - hyperactivity in young children causes cretinism.
- B. Thymus - starts undergoing atrophy after puberty
- C. Parathyroid - secretes parathormone which promotes movement of calcium ions form blood into bones during calcification.
- D. Pancreas - Delta cells of the Islets of Langerhans secrete a hormone which stimulates glycolysis in liver

Answer: B



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113. Tadpoles of Frog can be made to grow as giant sized tadpoles, if they are

- A. Administered antithyroid substance like thiourea
- B. Administered large amounts of thyroxine
- C. Reared on a diet rich in egg yolk
- D. Reared on a diet rich in both egg yolk and glucose

Answer: A



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114. Find out the correct match

Hormone	Gland	Function
(1) Thyroxine	Thyroid gland	Decreases basal metabolic rate
(2) Glucagon	β -cells of pancreas	Stimulates glycogenolysis resulting in an increased blood sugar
(3) Calcitonin	Thyroid gland	Decreases blood calcium levels
(4) Glucocorticoids	Adrenal medulla	Stimulate gluconeogenesis, lipolysis and proteolysis

A. N/A

B. N/A

C. N/A

D. N/A

Answer: C



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115. The hormone that helps in the conversion of glucose into glycogen is:

- A. Adrenaline
- B. Insulin
- C. Cortisone
- D. Bile acids

Answer: B



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116. Which of the following pairs correctly matches a hormone with the disease resulting from its deficiency ?

A. Thyroxine - Tetany

B. Parathyroid - Diabetes mellitus

C. Luteinizing hormone - Failure of ovulation

D. Insulin - Diabetes insipidus

Answer: C



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117. Which of the following is not a hereditary disease

A. Haemophilia

B. Cretinism

C. Cystic fibrosis

D. Thalassaemia

Answer: B



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118. A person is undergoing prolonged fasting. His urine would contain abnormal quantities of

A. Fats

B. Amino acids

C. Ketones

D. Glucose

Answer: C



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119. A steroid hormone which regulates glucose metabolism is

Or

Excess of which of the following hormones causes Cushing's syndrome

- A. Cortisol
- B. Corticosterone
- C. 11 - deoxycorticosterone
- D. Cortisone

Answer: A

120. Which one of the following is not a second messenger in hormone action

- A. cGMP
- B. Calcium
- C. Sodium
- D. cAMP

Answer: C



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121. Which of the following is an accumulation and release centre of neurohormones

- A. Posterior pituitary lobe

B. Intermediate lobe of the pituitary

C. Hypothalamus

D. Anterior pituitary lobe

Answer: A



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122. Which of the following is an amine hormone ?

A. Progesterone

B. Thyroxine

C. Oxypurin

D. Insulin

Answer: B

123. A health disorder that results from the deficiency of thyroxine in adults and is characterized by (i) a low metabolic rate, (ii) increase in body weight, and (iii) tendency to retain water in tissues is

- A. Myxoedema
- B. Cretinism
- C. Hypothyroidism
- D. Simple goiter

Answer: A

124. Low Ca^{+} in the body fluid may be the cause of

- A. Gout
- B. Tetany
- C. Anaemia
- D. Angina pectoris

Answer: B



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125. Which one of the following pairs is incorrectly matched ?

- A. Insulin - Diabetes mellitus (disease)
- B. Glucagon - Beta cells (source)
- C. Somatostatin - Delta cells (source)

D. Corpus luteum - Relaxin (secretion)

Answer: B



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126. Injury to adrenal cortex is not likely to affect the secretion of which one of the following ?

A. Cortisol

B. Aldosterone

C. Both Androstenedione and Dehydroepiandrosterone

D. Adrenaline

Answer: D



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127. Toxic agents present in food which interfere with thyroxine synthesis lead to the development of

- A. Thyrotoxicosis
- B. Toxic goitre
- C. Cretinism
- D. Simple goitre

Answer: D



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128. Match the source gland with its respective hormone as well as the function

Source gland	Hormone	Function
(1) Anterior pituitary	Oxytocin	Contraction of uterus muscles during child birth
(2) Posterior pituitary	Vasopressin	Stimulates resorption of water in the distal tubules in the nephron
(3) Corpus luteum	Estrogen	Supports pregnancy
(4) Thyroid	Thyroxine	Regulates blood calcium level

A. N/A

B. N/A

C. N/A

D. N/A

Answer: B

129. Given below is an incomplete table about certain hormones, their source glands and one major effect of each on the body in humans. Identify the correct option for the three blanks A, B and C.

GLAND	SECRETION	EFFECT ON BODY
A	Oestrogen	Maintenance of secondary sexual characters
Alpha cells of Islets of Langerhans	B	Raises blood sugar level
Anterior pituitary	C	Over secretion leads to gigantism

- A. *A* *B* *C*
 Ovary Glucagon Growth hormone
- B. *A* *B* *C*
 Placenta Insulin Vasopressin

C. *A* *B* *C*
Ovary Insulin Calcitonin

D. *A* *B* *C*
Placenta Glucagon Calcitonin

Answer: A

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130. Which one of the following pairs of hormones are the examples of those that can easily pass through the cell membrane of the target cell and bind to a receptor inside it (mostly in the nucleus)

- A. Thyroxin, Insulin
- B. Somatostatin, oxytocin
- C. Cortisol, testosterone
- D. Insulin, glucagon

Answer: C



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131. Select the correct matching of a hormone, its source and function.

Hormone	Source	Function
(1) Vasopressin	Posterior Pituitary	Increases loss of water through urine
(2) Norepinephrine	Adrenal medulla	Increases heart beat, rate of respiration & alertness
(3) Glucagon	Beta-cells of Islets of Langerhans	Stimulates glycogenolysis
(4) Prolactin	Posterior Pituitary	Regulates growth of mammary glands and milk formation in females

A. N/A

B. N/A

C. N/A

D. N/A

Answer: B

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132. The 24 hour (diurnal) rhythm of our body such as the sleep-wake cycle is regulated by the hormone

Or

Which hormone is secreted more in dark condition

- A. Calcitonin
- B. Prolactin
- C. Adrenaline
- D. Melatonin

Answer: D

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133. The gland which regulates the level of calcium in the blood is

- A. Thyroid
- B. Adrenal
- C. Parathyroids
- D. Pituitary

Answer: C



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134. Hypothyroidism during pregnancy causes

- A. Goitre
- B. Cretinism

C. Hypoglycemia

D. Diabetes mellitus

Answer: B



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135. During summer season, which hormone concentration is maintained at high level

A. Insulin

B. Vasopressin

C. Oxytocin

D. Corticoids

Answer: B



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136. Somatostatin is produced by

- A. Adenohypophysis
- B. Neurohypophysis
- C. Pineal gland
- D. Basal part of diencephalon

Answer: D

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137. Which of the following vitamins has some physiological effects similar to those of parathormone ?

- A. Vitamin A

B. Vitamin D

C. Vitamin C

D. Vitamin B

Answer: B



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138. Function of somatostatin is to

A. Stimulates glucagon release while inhibits insulin release

B. stimulates release of insulin and glucagon

C. inhibits release of insulin and glucagon

D. inhibits glucagon release while stimulates insulin release

Answer: C

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139. Thymosin hormone is secreted by

- A. Thyroid gland
- B. Parathyroid gland
- C. Thymus gland
- D. Hypothalamus

Answer: C

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140. Gigantism and acromegaly are due to

- A. Hyperthyroidism

B. Hypopituitarism

C. Hyperpituitarism

D. Hypothyroidism

Answer: C



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141. Which of the following is not correct for the effect of parathormone ?

A. It encourages the activity of osteoclasts

B. It lowers blood Ca^{2+} level

C. In its absence, body shivers due to constant muscle contraction

D. It stimulates absorption of Ca^{2+} by in testinal tract

Answer: B



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142. In females, hormone inhibin is secreted by

- A. Granulosa cells and corpus luteum
- B. Granulosa and theca
- C. Granulosa and cumulus oophorus cells
- D. Granulosa cells and zona pellucida

Answer: A



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143. Master gland, pituitary has a non - functional part in humans

A. Anterior pituitary

B. Pars intermedia

C. Neurohypophysis

D. Pars nervosa

Answer: B



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144. The chemical nature of hormones secreted by α and δ cells of pancreas is

A. glycolipid

B. glycoprotein

C. steroid

D. polypeptide

Answer: D

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145. Secretion of mineralocorticoids is under control of

- A. FSH
- B. TSH
- C. ACTH
- D. ADH

Answer: C

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146. Functioning of thyroid is under the control of TSH except for

A. Storage of iodine

B. Thyrocalcitonin

C. Thyronine

D. Thyroxine

Answer: B



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147. Damage to thymus in a child may lead to

A. loss of cell mediated immunity

B. loss of antibody mediated immunity

C. a reduction in the amount of plasma proteins

D. a reduction in the haemoglobin content in blood

Answer: A



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148. Match the hormone with its source of secretion

- | | |
|------------------|-------------------------|
| (a) Somatostatin | (A) Pineal gland |
| (b) Melatonin | (B) Corpus luteum |
| (c) Aldosterone | (C) Placenta |
| (d) Progesterone | (D) Adrenal cortex |
| (e) HCG | (E) Islet of Langerhans |
| | (F) Adenohypophysis |

A. a - E, b - A, C - F, d - C, e - B

B. a - A, b - 2, C - D, d - C, e - E

C. a - B, b - F, C - D, d - E, e - C

D. a - E, b - A, c - D, d - B, e - C

Answer: D



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149. Goitre can occur as a consequences of all the following except

- A. Grave's disease
- B. Excessive intake of exogeneous thyroxine
- C. Iodine deficiency
- D. Pituitary adenoma

Answer: B



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150. Antidiuretic hormone which is not steroid also known as

- A. Secretin

B. Vasopressin

C. Renin

D. Gastrin

Answer: B



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151. Condition of concentration of ketone body in urine is

A. acromegaly

B. diabetes mellitus

C. turner's syndrome

D. sickle - cell anaemia

Answer: B

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152. Endemic goiter is a state of

- A. increased thyroid function
- B. normal thyroid function
- C. decreased thyroid function
- D. moderate thyroid function

Answer: C

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153. Select the correct matched pair

- A. Pineal gland - does not influence menstrual cycle

B. Corpus luteum - secretes oxytocin

C. Interstitial cells - erythropoietic

D. cholecystikinin - stimulates pancreatic enzyme secretions

Answer: D



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154. Match the column I with column II and select the correct option

Column I	Column II
A ANF	1. Regulates blood calcium levels
B MSH	2. Decreases blood pressure
C GIP	3. Pigmentation
D TCT	4. Inhibits gastric secretion

A. A - 4, B - 1, C - 2, D - 3

B. A - 2, B - 1, C - 4, D - 3

C. A - 4, B - 1, C - 3, D - 2

D. A - 2, B - 3, C - 4, D - 1

Answer: D



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155. Which of the following is an amino acid derived hormone ?

A. insulin

B. epinephrine

C. estradiol

D. testosterone

Answer: B

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156. Which of the following hormones is a steroid ?

A. Oestrogen

B. Insulin

C. Glucagon

D. Thyroxine

Answer: A

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157. With reference to the pituitary , which of the following statements is true

- A. Neurohypophysis secretes vasopressin and oxytocin
- B. Neurohypophysis secretes TSH and STH
- C. Neurohypophysis collects and stores vasopressin and oxytocin
- D. adenohypophysis secretes vasopressin and oxytocin

Answer: C



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158. Erythropoietin is released by

- A. pituitary gland

B. pancreas

C. Adrenal gland

D. kidney

Answer: A



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159. Which of the following is a gastro intestinal hormone ?

A. Prolactin

B. Enterokinase

C. GH

D. FSH

Answer: B



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160. Tetany is caused by

- A. hyperparathyroidism
- B. hypoparathyroidism
- C. hyperthyroidism
- D. Hypothyroidism

Answer: B



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161. Which of the following is a mineralocorticoid ?

- A. testosterone

B. progesterone

C. adrenaline

D. aldosterone

Answer: D



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162. ACTH is secreted from

A. adrenal cortex

B. pituitary

C. adrenal medulla

D. thyroid

Answer: B

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163. Cretinism is caused by

- A. hypothyroidism
- B. hypoparathyroidism
- C. hyperthyroidism
- D. hyperparathyroidism

Answer: A

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164. Which of the following is known as matter endocrine gland

- A. Adrenal gland

B. Thyroid gland

C. Pituitary gland

D. Pineal gland

Answer: C



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165. Which of the following statements is correct in relation to the endocrine system.

A. Non - nutrient chemicals produced by the body in trace amount that act as intercellular messenger are known as hormones.

B. Releasing and inhibitory hormones are produced by the pituitary gland.

C. Adenohypophysis is under direct neural regulation of the hypothalamus.

D. Organs in the body like gastrointestinal tract, heart, kidney and liver do not produce any hormone.

Answer: A

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166. Select the answer which correctly matches the endocrine gland with the hormone it secretes and its function/deficiency

symptom

Endocrine gland	Hormone	Function/ deficiency symptoms
(1) Thyroid gland	Thyroxine	Lack of iodine in diet results in goitre
(2) Corpus luteum	Testosterone	Stimulates spermatogenesis
(3) Anterior pituitary	Oxytocin	Stimulates uterus contraction during child birth
(4) Posterior pituitary	Growth Hormone (GH)	Oversecretion stimulates abnormal growth

A. N/A

B. N/A

C. N/A

D. N/A

Answer: A



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

- A. Atrial natriuretic factor - ventricular wall increases the blood pressure
- B. Oxytocin - posterior pituitary, growth and maintenance of mammary glands
- C. Melatonin - pineal gland, regulates the normal rhythm of sleepwake cycle

D. Progesterone - corpus luteum, stimulation of growth and activities of female secondary sex organs

Answer: C

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168. A chemical signal that has both endocrine and neural roles is

- A. calcitonin
- B. epinephrine
- C. cortisol
- D. Melatonin

Answer: B

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169. Which one of the following hormones is not involved in sugar metabolism ?

A. Cortisone

B. Aldosterone

C. Insulin

D. Glucagon

Answer: B

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170. Which one of the following hormones thought synthesised elsewhere, is stored and released by the master gland ?

A. Antidiuretic hormone

B. Luteinizing hormone

C. Prolactin

D. Melanocyte stimulating hormone

Answer: A



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171. The amino acid tryptophan is the precursor for the synthesis of

A. Thyroxine and Triiodothyronine

B. Estrogen and Progesterone

C. Cortisol and Cortisone

D. Melatonin and Serotonin

Answer: D

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172. Which of the following pairs of hormones are not antagonistic (having opposite effects) to each other ?

- A. Insuline - Glucagon
- B. Aldosterone - Atrial Natriuretic Factor
- C. Relaxin - Inhibin
- D. Parathormone - Calcitonin

Answer: C

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173. Graves' disease is caused due to

- A. hyposecretion of thyroid gland
- B. hypersecretion of thyroid gland
- C. hypersecretion of adrenal gland
- D. hyposecretion of adrenal gland

Answer: B



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174. Name a peptide hormone which acts mainly on hepatocytes, adipocytes and enhances cellular glucose uptake and utilization :

- A. Insulin
- B. Glucagon

C. Secretin

D. Gastrin

Answer: A



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175. The posterior pituitary gland is not a 'true' endocrine gland because

A. it is provided with a duct

B. it only stores and releases hormones

C. it is under the regulation of hypothalamus

D. it secretes enzymes

Answer: B



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176. Hypersecretion of Growth Hormone in adults does not cause further increase in height, because

- A. Growth Hormone becomes inactive in adults
- B. Epiphyseal plates close after adolescence.
- C. Bones loose their sensitivity to Growth Hormones in adults
- D. Muscle fibres do not grow in size after birth.

Answer: B

177. The 'amino acid derivative' among the following hormone is

- A. Estriol

B. Estradiol

C. Ecdysone

D. Epinephrine

Answer: D



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