

CHEMICAL COORDINATION & INTEGRATION (ENDOCRINE SYSTEM)

PYQ

AIPMT 2006

- Which hormone causes dilation of blood vessels, increased oxygen consumption and gluconeogenesis?
(1) Adrenalin (2) Glucagon
(3) ACTH (4) Insulin
- Sertoli cells are regulated by the pituitary hormone known as –
(1) Prolactin (2) LH
(3) FSH (4) GH
- A steroid hormone which regulates glucose metabolism is –
(1) 11-deoxycorticosterone
(2) Cortisone
(3) Cortisol
(4) Corticosterone
- Which one of the following is not a second messenger in hormone action?
(1) Sodium (2) cAMP
(3) cGMP (4) Calcium

AIPMT 2009

- A health disorder that results from the deficiency of thyroxine in adults and characterised by –
 - A low metabolic rate
 - Increase in body weight and
 - Tendency to retain water in tissue is
(1) Simple goitre (2) Myxoedema
(3) Cretinism (4) Hypothyroidism

AIPMT-Pre 2010

- Toxic agents present in food which interfere with thyroxine synthesis lead to the development of:
(1) Simple goitre
(2) Thyrotoxicosis
(3) Toxic goitre
(4) Cretinism

- Injury to adrenal cortex is not likely to affect the secretion of which one of the following?
(1) Adrenaline
(2) Cortisol
(3) Aldosterone
(4) Both Androstenedione and Dehydroepiandrosterone
- Which one of the following pairs is incorrectly matched?
(1) Corpus luteum – Relaxin (secretion)
(2) Insulin – Diabetes mellitus (disease)
(3) Glucagon – Beta cells (Source)
(4) Somatostatin – Delta cells (source)

AIPMT-Mains 2010

- Which one of the following is now being commercially produced by biotechnological procedures?
(1) Morphine (2) Quinine
(3) Insulin (4) Nicotine
- Select the *correct* matching of a hormone, its source and function.

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

11. Signals from fully developed foetus and placenta ultimately lead to parturition which requires the release of :
- (1) Oxytocin from maternal pituitary
 - (2) Oxytocin from foetal pituitary
 - (3) Relaxin from placenta
 - (4) Estrogen from placenta

AIPMT-Pre 2012

12. 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) :-
- (1) Somatostatin, oxytocin
 - (2) Cortisol, testosterone
 - (3) Insulin, glucagon
 - (4) Thyroxin, Insulin

NEET-UG 2013

13. A pregnant female delivers a baby who suffers from stunted growth, mental retardation, low intelligence quotient and abnormal skin. This is the result of :
- (1) Over secretion of pars distalis
 - (2) Deficiency of iodine in diet
 - (3) Low secretion of growth hormone
 - (4) Cancer of the thyroid gland
14. Which of the following statements is **correct** in relation to the endocrine system?
- (1) Releasing and inhibitory hormones are produced by the pituitary gland.
 - (2) Adenohypophysis is under direct neural regulation of the hypothalamus.
 - (3) Organs in the body like gastrointestinal tract, heart, kidney and liver do not produce any hormones.
 - (4) Non-nutrient chemicals produced by the body in trace amount that act as intercellular messenger are known as hormones.

AIPMT 2014

15. Which of the following causes an increase in sodium reabsorption in the distal convoluted tubule ?
- (1) Increase in aldosterone levels
 - (2) Increase in antidiuretic hormone levels
 - (3) Decrease in aldosterone levels
 - (4) Decrease in antidiuretic hormone levels
16. Identify the hormone with its **correct** matching of source and function :
- (1) Oxytocin - posterior pituitary, growth and maintenance of mammary glands.
 - (2) Melatonin - pineal gland, regulates the normal rhythm of sleepwake cycle.
 - (3) Progesterone - corpus-luteum, stimulation of growth and activities of female secondary sex organs.
 - (4) Atrial natriuretic factor - ventricular wall increases the blood pressure.
17. Fight-or-flight reactions cause activation of :
- (1) the parathyroid glands, leading to increased metabolic rate.
 - (2) the kidney, leading to suppression of renin-angiotensin-aldosterone pathway.
 - (3) the adrenal medulla, leading to increased secretion of epinephrine and norepinephrine.
 - (4) the pancreas leading to a reduction in the blood sugar levels.

Re-AIPMT 2015

18. Which one of the following hormones is **not** involved in sugar metabolism ?
- (1) Glucagon
 - (2) Cortisone
 - (3) Aldosterone
 - (4) Insulin
19. Which one of the following hormones though synthesised elsewhere, is stored and released by the master gland ?
- (1) Melanocyte stimulating hormone
 - (2) Antidiuretic hormone
 - (3) Luteinizing hormone
 - (4) Prolactin

NEET-I 2016

20. Which of the following pairs of hormones are **not** antagonistic (having opposite effects) to each other?
- (1) Parathormone – Calcitonin
 - (2) Insulin – Glucagon
 - (3) Aldosterone – Atrial Natriuretic Factor
 - (4) Relaxin – Inhibin

NEET-II 2016

21. Graves' disease is caused due to :-
- (1) Hyposecretion of adrenal gland
 - (2) Hypersecretion of adrenal gland
 - (3) Hyposecretion of thyroid gland
 - (4) Hypersecretion of thyroid gland
22. Name a peptide hormone which acts mainly on hepatocytes, adipocytes and enhances cellular glucose uptake and utilization.
- (1) Secretin (2) Gastrin
 - (3) Insulin (4) Glucagon
23. Osteoporosis, an age-related disease of skeletal system, may occur due to :-
- (1) Decreased level of estrogen
 - (2) Accumulation of uric acid leading to inflammation of joints.
 - (3) Immune disorder affecting neuro-muscular junction leading to fatigue.
 - (4) High concentration of Ca^{++} and Na^+ .
24. The posterior pituitary gland is **not** a 'true' endocrine gland because :-
- (1) It is under the regulation of hypothalamus
 - (2) It secretes enzymes
 - (3) It is provided with a duct
 - (4) It only stores and releases hormones

NEET(UG) 2017

25. A temporary endocrine gland in the human body is:
- (1) Corpus cardiacum
 - (2) corpus luteum
 - (3) Corpus allatum
 - (4) Pineal gland

26. GnRH, a hypothalamic hormone, needed in reproduction, acts on:
- (1) anterior pituitary gland and stimulates secretion of LH and FSH.
 - (2) posterior pituitary gland and stimulates secretion of oxytocin and FSH.
 - (3) posterior pituitary gland and stimulates secretion of LH and relaxin.
 - (4) anterior pituitary gland and stimulates secretion of LH and oxytocin.
27. Hypersecretion of Growth Hormone in adults does not cause further increase in height, because:
- (1) Epiphyseal plates close after adolescence.
 - (2) Bones lose their sensitivity to Growth Hormone in adults.
 - (3) Muscle fibres do not grow in size after birth.
 - (4) Growth Hormone becomes inactive in adults.

NEET(UG) 2018

28. Which of the following is an amino acid derived hormone ?
- (1) Epinephrine (2) Ecdysone
 - (3) Estradiol (4) Estriol
29. Which of the following hormones can play a significant role in osteoporosis ?
- (1) Aldosterone and Prolactin
 - (2) Progesterone and Aldosterone
 - (3) Estrogen and Parathyroid hormone
 - (4) Parathyroid hormone and Prolactin

NEET(UG) 2019

30. How does steroid hormone influence the cellular activities?
- (1) Changing the permeability of the cell membrane.
 - (2) Binding to DNA and forming a gene-hormone complex.
 - (3) Activating cyclic AMP located on the cell membrane.
 - (4) Using aquaporin channels as second messenger.

31. Match the following hormones with the respective disease :

- | | |
|--------------------|-------------------------|
| (a) Insulin | (i) Addison's disease |
| (b) Thyroxin | (ii) Diabetes insipidus |
| (c) Corticoids | (iii) Arcomegaly |
| (d) Growth Hormone | (iv) Goitre |
| | (v) Diabetes mellitus |

Select the **correct** option.

- | | | | | |
|-----|------------|------------|------------|------------|
| | (a) | (b) | (c) | (d) |
| (1) | (v) | (i) | (ii) | (iii) |
| (2) | (ii) | (iv) | (iii) | (i) |
| (3) | (v) | (iv) | (i) | (iii) |
| (4) | (ii) | (iv) | (i) | (iii) |

NEET (UG) 2019 (Odisha)

32. Which of the following hormones is responsible for both the milk ejection reflex and the foetal ejection reflex ?

- | | |
|--------------|---------------|
| (1) Estrogen | (2) Prolactin |
| (3) Oxytocin | (4) Relaxin |

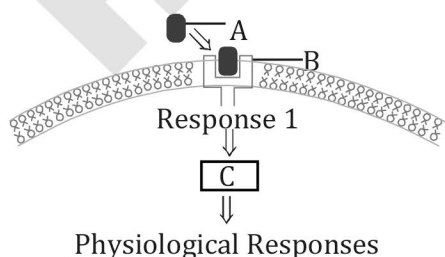
33. Which of the following conditions will stimulate parathyroid gland to release parathyroid hormone?

- (1) Fall in active Vitamin D levels
- (2) Fall in blood Ca^{+2} levels
- (3) Fall in bone Ca^{+2} levels
- (4) Rise in blood Ca^{+2} levels

34. Artificial light, extended work-time and reduced sleep-time disrupt the activity of

- (1) Thymus gland
- (2) Pineal gland
- (3) Adrenal gland
- (4) Posterior pituitary gland

35. Identify A, B and C in the diagrammatic representation of the mechanism of hormone action.



Select the correct option from the following :

- (1) A-Steroid Hormone; B-Hormone-receptor Complex, C-Protein
- (2) A-Protein Hormone, B-Receptor; C-Cyclic AMP
- (3) A-Steroid Hormone; B-Receptor, C - Second Messenger
- (4) A-Protein Hormone; B-Cyclic AMP, C-Hormone-receptor Complex

NEET (UG) 2020

36. Select the correct statement.

- (1) Insulin is associated with hyperglycemia
- (2) Glucocorticoids stimulate gluconeogenesis
- (3) Glucagon is associated with hypoglycemia.
- (4) Insulin acts on pancreatic cells and adipocytes.

37. Presence of which of the following conditions in urine are indicative of Diabetes Mellitus ?

- (1) Renal calculi and Hyperglycaemia
- (2) Uremia and Ketonuria
- (3) Uremia and Renal Calculi
- (4) Ketonuria and Glycosuria

38. Match the following columns and select the **correct** option :

- | Column-I | Column-II |
|---------------------|--------------------------|
| (a) Pituitary gland | (i) Grave's disease |
| (b) Thyroid gland | (ii) Diabetes mellitus |
| (c) Adrenal gland | (iii) Diabetes insipidus |
| (d) Pancreas | (iv) Addison's disease |

- | | | | | |
|-----|------------|------------|------------|------------|
| | (a) | (b) | (c) | (d) |
| (1) | (ii) | (i) | (iv) | (iii) |
| (2) | (iv) | (iii) | (i) | (ii) |
| (3) | (iii) | (ii) | (i) | (iv) |
| (4) | (iii) | (i) | (iv) | (ii) |

NEET (UG) 2020 (Covid-19)

39. Match the following columns and select the correct option :-

Column-I Column-II

- | | |
|-----------------------|-----------------------------|
| (a) Pituitary hormone | (i) Steroid |
| (b) Epinephrine | (ii) Neuropeptides |
| (c) Endorphins | (iii) Peptides,
proteins |
| (d) Cortisol | (iv) Biogenic amines |

- (1) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)
 (2) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
 (3) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
 (4) (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

40. Hormones stored and released from neurohypophysis are :-
 (1) Thyroid stimulating hormone and Oxytocin
 (2) Oxytocin and Vasopressin
 (3) Follicle stimulating hormone and Leutinizing hormone
 (4) Prolactin and Vasopressin

NEET (UG) 2021

41. Erythropoietin hormone which stimulates R.B.C. formation is produced by :
 (1) Alpha cells of pancreas
 (2) The cells of rostral adenohypophysis
 (3) The cells of bone marrow
 (4) Juxtaglomerular cells of the kidney

Exercise - II (Previous Year Questions)

ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	1	3	3	1	2	1	1	3	3	1	1	2	2	4	1
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	2	3	3	2	4	4	3	1	4	2	1	1	1	3	2
Question	31	32	33	34	35	36	37	38	39	40	41				
Answer	3	3	2	2	2	2	4	4	2	2	4				

EXERCISE-III (A) (NCERT Based QUESTIONS)

- Steroid hormones –

 - Have only cell surface receptors
 - Are lipophobic
 - Have receptors within the nucleus
 - Are produced by only adrenal cortex.
- Both adrenaline and cortisol are secreted in response to stress. Which of the following statements is also true for both of these hormones?

 - They act to increase blood glucose
 - They are secreted by the adrenal cortex
 - Their secretion is stimulated by adrenocorticotropin
 - They are secreted into the blood within seconds of the onset of stress.
- Which one is incorrect for hypothalamus ?

 - Basal part of diencephalon
 - Regulate narrow spectrum of body functions
 - Neural control of posterior pituitary
 - Release somatostatin for GH Inhibition
- Pineal gland is not related with :-

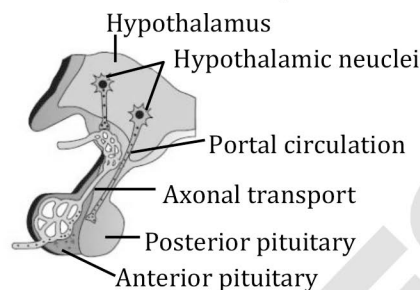
 - Body temperature
 - Defence capability
 - Metabolism
 - Kidney functions
- Vigorous contraction of uterus muscles is stimulated by:-

 - ADH
 - MSH
 - GH
 - Oxytocin
- Find out correctly matched :-

 - Thymus – AMI
 - PTH – Ca^{+2} absorption
 - Adrenal – glucocorticoids
 - Thyroid – Anti-inflammatory response
 - A, B, D
 - A, B, C
 - B, C, D
 - A, C, D
- Which one is incorrect statement ?

 - Hypothalamus regulate a wide spectrum of body functions.
 - Pituitary, pineal, testes, heart and kidney are organised endocrine gland of body.
 - Hormones are non-nutrient chemicals and intercellular messenger.
 - LH helps in maintenance of corpus luteum after ovulation.

- Find out incorrect labelling in following diagram



- Axonal transport and Anterior pituitary
 - Portal circulation and Posterior pituitary
 - Anterior pituitary and Posterior pituitary
 - Portal circulation and Axonal transport
- Find out incorrect match of hormone with respective function :-

	Hormone	Function
(1)	Melatonin	Sleep wake cycle and body temperature
(2)	FSH	Growth of ovarian follicles and stimulate gonadal activity.
(3)	Adrenaline	Increase concentration of glucose in blood.
(4)	Progesterone	Stimulate growth and activities of female secondary sex organs

- Hyperglycemic and hypoglycemic hormones are

 - Insulin and glucagon
 - Adrenalin and glucagon
 - Adrenalin and Insulin
 - Glucagon and growth hormone
- Group of hormones which is related with cytoplasmic bounded receptors ?

 - Hypothalamic hormones and epinephrine
 - Thyroid hormone and estradiol
 - Insulin and glucagon
 - GH and MSH
- Two hormones(a)..... and(b)..... synthesize in hypothalamus and transported in pituitary gland through(c)..... and(d)..... respectively.

 - a = oxytocin ⇒ c = portal circulation
b = ADH ⇒ d = direct release
 - a = ADH ⇒ c = axonal transport
b = TSHRF ⇒ d = portal circulation
 - a = ACTH ⇒ c = axonal transport
b = MSH ⇒ d = portal circulation
 - a = TSHRF ⇒ c = axonal transport
b = ADH ⇒ d = portal circulation

EXERCISE-III (B) (ANALYTICAL QUESTIONS)

13. Which one is correctly matched ?
 (a) Pineal gland – Metabolism, Mental retardation
 (b) Thymus – Myasthenia gravis
 (c) Thyroid – Anti inflammatory reaction
 (d) Pancreas – Prolonged hyperglycemia
 (1) a, c (2) b, c (3) c, d (4) b, d
14. Which one of the following decreases blood pressure ?
 (1) Insulin (2) ANF
 (3) ADH (4) Aldosterone
15. After ovulation, ruptured follicle secrete hormone that helps in :-
 (1) Libido
 (2) Growth of facial hair
 (3) High pitch voice
 (4) Pregnancy support
16. Diabetic patients are successfully treated with:-
 (1) GH therapy
 (2) More amount of thyroxine
 (3) Insulin therapy
 (4) Both (2) and (3)
17. Find out suitable match for the following hormones and related organ :-
 (1) ANF – Heart, Calcitonin – parathyroid
 (2) Renin – Kidney, Relaxin – Placenta
 (3) Calcitonin – Kidney, HCG → Ovary
 (4) Oestrogen – Testes, Progesterone → Graafian follicle
18. Parathormone causes :-
 (1) Hypercalcemia
 (2) Hyperglycemia
 (3) Hyperkalemia
 (4) Hypocalcemia and hypoglycemia both
19. In mammals the female secondary sexual characters are developed mainly by the hormone?
 (1) HCG (2) Progesterone
 (3) Estrogens (4) All of these
20. Which of the following is an accumulation and release centre of Neurohormones?
 (1) Anterior Pituitary lobe
 (2) Neurohypophysis
 (3) Pars intermedia
 (4) Hypothalamus
21. BMR and Temperature of body is controlled by which endocrine gland?
 (1) Adrenal cortex (2) Thymus
 (3) Thyroid (4) Pituitary
22. Reabsorption of Na⁺ along with excretion of K⁺ is controlled by which one of the following hormones?
 (1) Prostaglandins (2) Aldosterone
 (3) Estrogen (4) Cortisol
23. Location and secretion of Leydig cells are?
 (1) Pancreas – Glucagon
 (2) Ovary – Estrogen
 (3) Ovary – Progesterone
 (4) Testis – Testosterone
24. Urinary excretion of Na⁺ is regulated by-
 (1) Anterior Pituitary
 (2) Adrenal cortex
 (3) Neurohypophysis
 (4) Pars intermedia
25. Thyrocalcitonin is secreted during -
 (1) Increased blood calcium level
 (2) Decreased blood calcium level
 (3) Both (1) and (2)
 (4) Increased blood sugar level.
26. Which of the following hormones increase alertness, piloerection and sweating ?
 (1) TCT (2) Catecholamines
 (3) Cortisol (4) Thymosins

Exercise - III

ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	3	1	2	4	4	2	2	4	4	3	2	2	4	2	4
Question	16	17	18	19	20	21	22	23	24	25	26				
Answer	3	2	1	3	2	3	2	4	2	1	2				