FREE EDITION · NOTES + 3 SAMPLE MCQS

CUET · BIOLOGY · CLASS XI · CODE 304

Chemical Coordination and Integration

CUET unit: Human Physiology → Chemical Coordination and Integration

By **UniDrill** · NCERT-grounded study material

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📌 Snapshot

- Establishes the endocrine system as the slow, sustained partner of the neural system in physiological coordination, with hormones defined as non-nutrient intercellular chemical messengers produced in trace amounts.
- Maps every organised endocrine gland of the human body — hypothalamus, pituitary, pineal, thyroid, parathyroid, thymus, adrenal, pancreas, testis, ovary — plus non-endocrine sources (heart, kidney, GI tract).
- Connects each hormone to its target, action, and the disorder caused by its hyper- or hyposecretion (gigantism, dwarfism, acromegaly, diabetes insipidus, goitre, cretinism, Graves' disease, Addison's disease, diabetes mellitus).
- Explains the molecular basis of hormone action — membrane-bound receptors with second messengers (cAMP) for peptide hormones vs intracellular/nuclear receptors regulating gene expression for steroid hormones and iodothyronines.
- CUET tests this chapter heavily as a single-MCQ-per-gland matrix (gland → hormone → function → disorder), match-the-following sets, and assertion–reason items on insulin/glucagon and PTH/TCT antagonism.

📖 Detailed Notes

2.1 Core concepts

- The neural system delivers point-to-point, rapid but short-lived coordination; since nerve fibres cannot innervate every body cell and cellular functions need continuous regulation, a sustained chemical coordination is layered on top, and the neural and endocrine systems together regulate physiological functions in the body (NCERT §19 intro, p. 239).
- Endocrine glands lack ducts and are hence called **ductless glands**; their secretions, **hormones**, are non-nutrient chemicals that act as intercellular messengers and are produced in trace amounts — a new definition broader than the classical "blood-borne chemical from gland to target" version, covering molecules from non-classical sources too (NCERT §19.1, p. 239).
- Invertebrates possess very simple endocrine systems with few hormones, while vertebrates use a large number of chemicals as hormones; the **human endocrine system** is the representative scheme studied here (NCERT §19.1, p. 239).

- The endocrine system is the sum of organised endocrine glands — **pituitary, pineal, thyroid, adrenal, pancreas, parathyroid, thymus and gonads** (testis in males, ovary in females) — plus hormone-producing tissues/cells in **gastrointestinal tract, liver, kidney and heart** (NCERT §19.2, p. 240, Figure 19.1).
- The **hypothalamus** is the basal part of the diencephalon (forebrain) and regulates a wide spectrum of body functions; it contains groups of neurosecretory cells called nuclei that synthesise two classes of hormones — **releasing hormones** (e.g., GnRH, which stimulates anterior pituitary release of gonadotrophins) and **inhibiting hormones** (e.g., somatostatin, which inhibits GH release); these axonal hormones reach the anterior pituitary through a **portal circulatory system**, while the posterior pituitary is under direct neural regulation of the hypothalamus (NCERT §19.2.1, p. 240).
- The **pituitary gland** sits in the **sella tursica** (a bony cavity) and is attached to the hypothalamus by a stalk; anatomically it has an **adenohypophysis** (pars distalis + pars intermedia) and a **neurohypophysis** (pars nervosa = posterior pituitary). Pars distalis (anterior pituitary) secretes six trophic hormones — **GH, PRL, TSH, ACTH, LH, FSH**; pars intermedia secretes only one — **MSH** — and in humans is almost merged with pars distalis. Neurohypophysis only stores and releases **oxytocin** and **vasopressin**, both synthesised by the hypothalamus and transported axonally to the posterior lobe (NCERT §19.2.2, p. 241).
- **Growth Hormone disorders:** over-secretion in growing age → **gigantism**, low secretion → **pituitary dwarfism**; excess GH in adults (middle age) produces severe facial disfigurement — **acromegaly** — which is hard to diagnose early and may cause serious complications and premature death if unchecked (NCERT §19.2.2, p. 241).
- Anterior pituitary trophic actions: **PRL** regulates mammary gland growth and milk formation; **TSH** stimulates thyroid hormone synthesis and secretion; **ACTH** stimulates secretion of steroid hormones (glucocorticoids) from the adrenal cortex; **LH** and **FSH** (gonadotrophins) — in males, LH stimulates synthesis/secretion of androgens from testis, and FSH with androgens regulates spermatogenesis; in females, LH induces ovulation of fully mature Graafian follicles and maintains the corpus luteum, while FSH stimulates growth and development of ovarian follicles; **MSH** acts on melanocytes and regulates skin pigmentation (NCERT §19.2.2, pp. 241–242).
- Posterior pituitary outputs: **oxytocin** acts on smooth muscles — vigorous uterine contraction at childbirth and milk ejection from the mammary glands; **vasopressin (ADH)** acts mainly on the kidney, stimulating resorption of water and electrolytes by the distal tubules and reducing water loss in urine (anti-diuretic action). An impaired ADH synthesis/release diminishes the kidney's ability to conserve water → water loss and dehydration → **Diabetes Insipidus** (NCERT §19.2.2, p. 242).
- The **pineal gland** lies on the dorsal side of the forebrain and secretes **melatonin**, which regulates the 24-hour (diurnal) rhythm — sleep-wake cycle and body

temperature — and also influences metabolism, pigmentation, the menstrual cycle, and defense capability (NCERT §19.2.3, p. 242).

- The **thyroid gland** has two lobes located on either side of the trachea, connected by a thin flap of connective tissue called the **isthmus**; it is composed of **follicles** (each follicle is made of follicular cells enclosing a cavity) and stromal tissues. Follicular cells synthesise **tetraiodothyronine (T4, thyroxine)** and **triiodothyronine (T3)**, and **iodine is essential** for normal thyroid hormone synthesis. Iodine deficiency → **hypothyroidism** + enlargement of the gland → **goitre**; hypothyroidism during pregnancy → defective foetal development, **stunted growth (cretinism)**, mental retardation, low IQ, abnormal skin, deaf-mutism; in adult women, hypothyroidism may make the menstrual cycle irregular. Hyperthyroidism (from thyroid cancer/nodules) abnormally raises secretion of thyroid hormones; **exophthalmic goitre / Graves' disease** is a form of hyperthyroidism with gland enlargement, **protrusion of the eyeballs**, increased BMR and weight loss (NCERT §19.2.4, pp. 242–243).
- Thyroid hormones regulate **basal metabolic rate**, support **RBC formation**, control metabolism of carbohydrates, proteins and fats, and influence water–electrolyte balance. The thyroid also secretes a protein hormone, **thyrocalcitonin (TCT)**, which lowers blood Ca^{2+} levels (NCERT §19.2.4, p. 243).
- In humans, four **parathyroid glands** sit on the back (dorsal) side of the thyroid, one pair per thyroid lobe; they secrete a peptide hormone, **parathyroid hormone (PTH)**, whose secretion is regulated by circulating Ca^{2+} levels. PTH is **hypercalcemic** — it raises blood Ca^{2+} by stimulating bone resorption (demineralisation), increasing Ca^{2+} reabsorption at the renal tubules, and increasing Ca^{2+} absorption from digested food; with TCT it maintains calcium balance (NCERT §19.2.5, p. 243).
- The **thymus**, a lobular structure between the lungs behind the sternum on the ventral side of aorta, plays a major role in immunity by secreting **thymosins** — which drive differentiation of **T-lymphocytes** (cell-mediated immunity) and also promote antibody production (humoral immunity). Thymus degenerates in old people, so thymosin output and immune responses weaken with age (NCERT §19.2.6, p. 243).
- Each **adrenal gland** sits above one kidney and has a centrally located **adrenal medulla** and an outer **adrenal cortex**; underproduction of cortical hormones alters carbohydrate metabolism causing acute weakness and fatigue — **Addison's disease** (NCERT §19.2.7, p. 244).
- The **adrenal medulla** secretes two catecholamines, **adrenaline (epinephrine)** and **noradrenaline (norepinephrine)**, rapidly released under stress and emergency — **emergency hormones / hormones of Fight or Flight**. They increase alertness, pupillary dilation, piloerection (raising of hairs), sweating, heart rate, strength of heart contraction and rate of respiration, and stimulate glycogenolysis (raising blood glucose), lipolysis and proteolysis (NCERT §19.2.7, pp. 244–245).

- The **adrenal cortex** is divisible into three layers — **zona reticularis** (inner), **zona fasciculata** (middle), **zona glomerulosa** (outer) — and secretes many hormones together called **corticoids**. **Glucocorticoids** (cortisol is the principal one) stimulate gluconeogenesis, lipolysis and proteolysis, inhibit cellular uptake and utilisation of amino acids, maintain cardiovascular and kidney function, produce anti-inflammatory and immunosuppressive effects, and stimulate RBC production. **Mineralocorticoids** (aldosterone is the main one) act on the renal tubules, stimulating reabsorption of Na^+ and water and excretion of K^+ and phosphate — maintaining electrolytes, body fluid volume, osmotic pressure and blood pressure. The cortex also secretes small amounts of androgenic steroids that contribute to growth of axial, pubic and facial hair during puberty (NCERT §19.2.7, p. 245).
- The **pancreas** is a composite gland that is both exocrine and endocrine; the endocrine part is the **Islets of Langerhans** (1–2 million islets, 1–2% of pancreatic tissue). ***α*-cells** secrete **glucagon** and ***β*-cells** secrete **insulin**. **Glucagon** is a peptide hyperglycemic hormone — acting mainly on hepatocytes, it stimulates glycogenolysis (producing **hyperglycemia**) and gluconeogenesis, and reduces cellular glucose uptake/utilisation. **Insulin** is a peptide hypoglycemic hormone acting mainly on hepatocytes and adipocytes, enhancing cellular glucose uptake/utilisation → **hypoglycemia** — and stimulating conversion of glucose to glycogen (**glycogenesis**). Glucose homeostasis is jointly maintained by insulin and glucagon. Prolonged hyperglycemia leads to **diabetes mellitus** — loss of glucose in urine and formation of ketone bodies; diabetic patients are treated with insulin therapy (NCERT §19.2.8, pp. 245–246).
- The **testis** is present in pairs in the scrotal sac and serves dual roles — primary sex organ and endocrine gland. It is composed of **seminiferous tubules** and **stromal/interstitial tissue**; **Leydig (interstitial) cells** in the intertubular spaces produce **androgens** (mainly **testosterone**). Androgens regulate development, maturation and functions of male accessory sex organs (epididymis, vas deferens, seminal vesicles, prostate, urethra), stimulate muscular growth, growth of facial and axillary hair, aggressiveness, low pitch of voice, drive spermatogenesis, act on the CNS to influence male sexual behaviour (libido), and produce anabolic effects on protein and carbohydrate metabolism (NCERT §19.2.9, p. 246).
- The **ovary** is a paired abdominal organ — the primary female sex organ that produces one ovum per menstrual cycle and also secretes two groups of steroid hormones, **estrogen** and **progesterone**. Estrogen is secreted mainly by the **growing ovarian follicles** and after ovulation the ruptured follicle becomes the **corpus luteum**, which secretes mainly progesterone. Estrogen stimulates growth and activities of female secondary sex organs, appearance of female secondary sex characters (e.g., high-pitched voice), mammary gland development and regulates female sexual behaviour. Progesterone supports pregnancy and acts on the mammary glands to stimulate formation of alveoli (sac-like structures storing milk) and milk secretion (NCERT §19.2.10, pp. 246–247).

- **Hormones from non-endocrine tissues:** the **atrial wall of the heart** secretes **atrial natriuretic factor (ANF)** which dilates blood vessels and decreases blood pressure when BP rises; **juxtaglomerular cells of the kidney** produce **erythropoietin**, which stimulates erythropoiesis (RBC formation); endocrine cells of the **GI tract** secrete four major peptide hormones — **gastrin** (HCl + pepsinogen secretion by gastric glands), **secretin** (water + bicarbonate secretion by exocrine pancreas), **cholecystokinin (CCK)** (pancreatic enzymes and bile release from gall bladder), and **gastric inhibitory peptide (GIP)** (inhibits gastric secretion and motility); other non-endocrine tissues also secrete **growth factors** essential for normal growth and tissue repair (NCERT §19.3, p. 247).
- **Mechanism of hormone action:** hormones bind specific proteins called **hormone receptors** present only in target tissues — **membrane-bound receptors** on the cell surface or **intracellular (mostly nuclear) receptors** inside the cell. Each receptor is specific to one hormone, and binding forms a **hormone–receptor complex** that triggers biochemical changes regulating target-tissue metabolism and hence physiology. On chemical basis, hormones are grouped as (i) **peptide/polypeptide/protein hormones** (insulin, glucagon, pituitary, hypothalamic), (ii) **steroids** (cortisol, testosterone, estradiol, progesterone), (iii) **iodothyronines** (thyroid hormones), and (iv) **amino-acid derivatives** (epinephrine). Hormones interacting with membrane-bound receptors do not enter the target cell — they generate **second messengers** (cyclic AMP, IP_3, Ca^{2+}) that regulate cellular metabolism. Hormones using intracellular receptors (steroids, iodothyronines) form a complex that interacts with the genome to regulate gene expression / chromosome function, and the cumulative biochemical actions produce physiological and developmental effects (NCERT §19.4, pp. 247–248).

2.2 Definitions to memorise

Term	Definition	Page
Hormone	Non-nutrient chemical acting as intercellular messenger, produced in trace amounts	239
Endocrine gland	Ductless gland whose secretions (hormones) pass directly into blood	239
Releasing hormone	Hypothalamic hormone that stimulates secretion of a pituitary hormone (e.g., GnRH)	240
Inhibiting hormone	Hypothalamic hormone that inhibits a pituitary hormone (e.g., somatostatin inhibits GH)	240
Sella tursica	Bony cavity in the skull base in which the pituitary gland sits	241
Adenohypophysis	Anterior part of pituitary; pars distalis + pars intermedia	241
Neurohypophysis		241

Term	Definition	Page
	Posterior pituitary (pars nervosa) — stores and releases oxytocin and vasopressin	
Acromegaly	Severe facial disfigurement due to excess GH in middle-aged adults	241
Diabetes Insipidus	Impaired ADH synthesis/release → water loss and dehydration	242
Melatonin	Pineal hormone regulating diurnal rhythm — sleep-wake cycle, body temperature	242
Goitre	Enlargement of thyroid gland due to dietary iodine deficiency (hypothyroidism)	242
Cretinism	Stunted growth + mental retardation in offspring of hypothyroid pregnancy	242–243
Exophthalmic goitre / Graves' disease	Hyperthyroidism with thyroid enlargement, eyeball protrusion, raised BMR, weight loss	243
Thyrocalcitonin (TCT)	Protein hormone from thyroid that lowers blood calcium	243
PTH	Peptide hormone from parathyroid; hypercalcemic — raises blood Ca^{2+}	243
Thymosins	Peptide hormones from thymus driving T-lymphocyte differentiation and antibody production	243
Addison's disease	Underproduction of adrenal cortex hormones → weakness and fatigue	244
Catecholamines	Adrenaline + noradrenaline from adrenal medulla; emergency "fight or flight" hormones	244
Glucocorticoids	Adrenal cortical hormones (mainly cortisol) regulating carbohydrate metabolism	245
Mineralocorticoids	Adrenal cortical hormones (mainly aldosterone) regulating water/electrolyte balance	245
Islets of Langerhans	Endocrine pancreatic clusters — α-cells (glucagon), β-cells (insulin)	245
Diabetes mellitus	Disorder from prolonged hyperglycemia — urinary glucose, ketone bodies	246
Leydig cells	Interstitial testicular cells producing androgens (mainly testosterone)	246
Corpus luteum	Post-ovulatory remnant of Graafian follicle; secretes mainly progesterone	246
ANF	Atrial natriuretic factor from heart atria; dilates vessels, lowers BP	247

2.3 Diagrams / processes to remember

- **Figure 19.1 (p. 240)** — Location of all endocrine glands in the human body (hypothalamus, pituitary, pineal, thyroid/parathyroid, thymus, adrenal, pancreas, ovary/testis). Use this as the master mental-map for every endocrine gland.
- **Figure 19.2 (p. 241)** — Pituitary gland and its anatomical link to the hypothalamus through hypothalamic neurons and portal circulation; shows anterior and posterior pituitary lobes — anchor for the "hypothalamus synthesises oxytocin/vasopressin, posterior pituitary only stores" trap.
- **Figure 19.3 (p. 242)** — Position of thyroid (ventral, two lobes joined by isthmus, around trachea) and parathyroid glands (dorsal side, four glands). Crucial for the PTH/TCT antagonism MCQs.
- **Figure 19.4 (p. 244)** — Adrenal gland above kidney; sectional view showing adrenal cortex (outer) and adrenal medulla (inner) — anchor for the cortex (corticoids) vs medulla (catecholamines) distinction.
- **Figure 19.5 (pp. 248–249)** — Mechanism of hormone action: (a) protein hormone (e.g., FSH) binding to membrane receptor on ovarian cell, generating cAMP/Ca^{2+} second messenger; (b) steroid hormone (e.g., estrogen) crossing membrane to bind intracellular receptor, complex acting on genome → mRNA → proteins → physiological response.

2.4 Common confusions / NTA trap points

- Pars intermedia secretes ONLY MSH; in humans it is almost merged with pars distalis — students often misattribute MSH to anterior pituitary proper (p. 241).
- Oxytocin and vasopressin (ADH) are **synthesised by the hypothalamus** but only **stored and released** by the posterior pituitary — a classic distractor swap (p. 241).
- Glucagon is from ***α*-cells** and insulin from ***β*-cells** (not the reverse) (NCERT p. 245).
- PTH is **hypercalcemic** (raises Ca^{2+}) and TCT is **hypocalcemic** (lowers Ca^{2+}) — together they maintain calcium balance (p. 243).
- Diabetes **insipidus** (ADH deficiency, water-loss disease) is NOT the same as diabetes **mellitus** (insulin deficiency, glucose-loss disease) — NTA frequently sets this as an MCQ pair (pp. 242, 246).
- Cortisol is the main **glucocorticoid**; aldosterone is the main **mineralocorticoid** — both are from the adrenal **cortex**, NOT the medulla (the medulla secretes catecholamines) (pp. 244–245).
- Estrogen comes from growing ovarian follicles; progesterone is secreted **mainly by the corpus luteum** (p. 246).
- LH in **males** stimulates androgen secretion; in **females** it triggers ovulation and maintains corpus luteum — the same hormone, two opposite-sex roles, often swapped in distractors (pp. 241–242).

- ACTH targets adrenal **cortex** (glucocorticoid release), NOT adrenal medulla; do not confuse with sympathetic stimulation of catecholamines (p. 241).
- Erythropoietin = **kidney** (juxtaglomerular cells); ANF = **heart** (atrial wall) — these two non-endocrine sources are the favourite swap trap (p. 247).
- Cyclic AMP, IP_3 and Ca^{2+} are intracellular **second messengers** — students sometimes misread them as the hormones themselves (p. 248).

2.5 Key glands → hormones → action / disorder (NCERT-cited)

Gland / source	Hormone (chemical class)	Main action(s)	Disorder when over/ under	NCERT page
Hypothalamus	GnRH (releasing)	Stimulates pituitary release of gonadotrophins	—	240
Hypothalamus	Somatostatin (inhibiting)	Inhibits GH release from pituitary	—	240
Anterior pituitary (pars distalis)	GH (protein)	Promotes body growth	Gigantism (over, growing); pituitary dwarfism (under); Acromegaly (over, adult)	241
Anterior pituitary	TSH (protein)	Stimulates thyroid hormone secretion	—	241
Anterior pituitary	ACTH (peptide)	Stimulates glucocorticoid secretion from adrenal cortex	—	241
Anterior pituitary	LH / FSH (gonadotrophins)	Males — LH→androgens, FSH+androgens→spermatogenesis; Females — LH ovulation/corpus luteum, FSH follicle growth	—	241–242
Anterior pituitary	PRL (protein)	Mammary growth and milk formation	—	241
Pars intermedia	MSH	Acts on melanocytes, regulates skin pigmentation	—	242
Posterior pituitary (pars nervosa)	Oxytocin (synthesised by hypothalamus)	Uterine contraction at childbirth, milk ejection	—	242
Posterior pituitary	Vasopressin / ADH	Resorption of water and electrolytes by distal renal tubules	Diabetes Insipidus (deficiency)	242

Gland / source	Hormone (chemical class)	Main action(s)	Disorder when over/ under	NCERT page
Pineal	Melatonin	Regulates 24-hour diurnal rhythm; sleep-wake, body temperature, metabolism, pigmentation, menstrual cycle, defense	—	242
Thyroid (follicular cells)	T_4 (thyroxine), T_3 (iodothyronines)	Regulate BMR, RBC formation, metabolism of carbohydrates/ proteins/fats, water-electrolyte balance	Goitre (iodine deficiency); Cretinism (hypothyroid pregnancy); Graves' (hyper)	242–243
Thyroid	Thyrocalcitonin (TCT, protein)	Lowers blood calcium	—	243
Parathyroid	PTH (peptide)	Hypercalcemic — bone resorption, renal Ca^{2+} reabsorption, intestinal Ca^{2+} absorption	—	243
Thymus	Thymosins (peptide)	T-lymphocyte differentiation (cell-mediated immunity); promote antibody production (humoral)	Weak immunity in old age (thymus degenerates)	243
Adrenal cortex	Glucocorticoids (cortisol — steroid)	Gluconeogenesis, lipolysis, proteolysis, anti-inflammatory, immunosuppressive, RBC production	Addison's disease (under)	244–245
Adrenal cortex	Mineralocorticoids (aldosterone — steroid)	Na^+ and water reabsorption; K^+ and phosphate excretion at renal tubules	—	245
Adrenal medulla	Adrenaline + noradrenaline (catecholamines / amino-acid derivatives)	Fight or flight — ↑ alertness, pupillary dilation, piloerection, sweating, heart rate, contraction strength, respiration; glycogenolysis, lipolysis, proteolysis	—	244–245
Pancreas (α-cells)	Glucagon (peptide)	Hyperglycemic — glycogenolysis + gluconeogenesis in hepatocytes	—	245
Pancreas (β-cells)	Insulin (peptide)	Hypoglycemic — cellular glucose uptake + glycogenesis in hepatocytes/adipocytes	Diabetes mellitus (deficiency / resistance)	245–246

Gland / source	Hormone (chemical class)	Main action(s)	Disorder when over/ under	NCERT page
Testis (Leydig cells)	Testosterone (androgen, steroid)	Male accessory sex organs, secondary sex characters, spermatogenesis, libido, anabolic metabolism	—	246
Ovary (follicles)	Estrogen (steroid)	Female secondary sex characters, accessory organ growth, mammary development, sexual behaviour	—	246–247
Ovary (corpus luteum)	Progesterone (steroid)	Supports pregnancy, mammary alveoli formation, milk secretion	—	247
Heart (atrial wall)	ANF (peptide)	Dilates blood vessels, lowers blood pressure	—	247
Kidney (juxtaglomerular cells)	Erythropoietin (peptide)	Stimulates RBC formation (erythropoiesis)	—	247
GI tract	Gastrin / Secretin / CCK / GIP	Gastrin→HCl + pepsinogen; Secretin→water+bicarbonate from pancreas; CCK→pancreatic enzymes + bile; GIP→inhibits gastric secretion/motility	—	247

🎯 Practice MCQs

Q1. Hormones are best described as:

A. Nutrient organic molecules secreted by exocrine glands and stored locally

B. Non-nutrient chemicals that act as intercellular messengers and are produced in trace amounts

C. Enzymes produced by neural tissue that catalyse intracellular reactions

D. Ducted gland secretions that reach target organs through lymph

Q2. Which one of the following hormones is NOT secreted by the pars distalis of the pituitary?

A. Adrenocorticotrophic hormone (ACTH)

B. Follicle stimulating hormone (FSH)

C. Melanocyte stimulating hormone (MSH)

D. Prolactin (PRL)

Q3. Read the two statements: Statement I: Oxytocin and vasopressin are synthesised by the posterior pituitary. Statement II: Vasopressin acts on distal renal tubules to resorb water and electrolytes; its deficiency leads to Diabetes Insipidus.

A. Both statements are correct

B. Statement I is correct; Statement II is incorrect

C. Statement I is incorrect; Statement II is correct

D. Both statements are incorrect

📊 PYQ Alignment

This chapter has historically yielded roughly 8–10 MCQs per year across CUET (UG) Biology papers — it is one of the densest single-MCQ-per-fact units in the syllabus. Typical question formats include direct gland-hormone-function recall, match-the-following sets across glands/hormones/disorders, assertion-reason pairs (especially PTH/TCT antagonism, insulin/glucagon antagonism), and case-symptom items asking students to identify the deficient or excessive hormone behind a disorder such as diabetes mellitus, diabetes insipidus, goitre, cretinism, Graves' disease, acromegaly or Addison's disease.

Chemical Coordination and Integration appeared in CUET (UG) Biology across 1 cycle(s) — 3 question(s) total. The questions below were extracted from official CUET (UG) papers and matched to this chapter by topic. See `/pyq/biology` for the full PYQ archive.

CUET 2023 — Actual PYQs from this chapter

Q.5 (CUET 2023) Select the hormone which is not secreted by human placenta:

- A) Estrogen
- B) Progesterone
- C) Human chorionic gonadotropin
- D) Luteinising hormone

Tests: aligns with chapter content Answer: Not in extracted key — verify against official NTA key

Q.8 (CUET 2023) Match List-I with List-II List-I (A) Lippes loop (B) Vaults (C) Periodic abstinence (D) Progestasert List-II (I) Barrier (II) Hormone releasing device (III) Non-medicated IUD (IV) Natural method Choose correct answer:

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

Tests: aligns with chapter content Answer: Not in extracted key — verify against official NTA key

Q.19 (CUET 2023) The statements not true for allergy are: (A) Allergy is due to chemicals like histamine and serotonin. (B) Allergens are substances which cause allergy. (C) Antibodies produced are IgA type. (D) Adrenaline and steroids quickly enhance symptoms.

- A) C and D only
- B) A and C only
- C) A and B only
- D) B and D only

Tests: aligns with chapter content Answer: Not in extracted key — verify against official NTA key