

Chemical Coordination and Integration — CBSE Pattern Test 1

Class 11 Biology · 90 minutes · 40 marks · Sections A–D with answer key · Narayan Gurukul Academy

Test 1 — CBSE Pattern (90 minutes, 40 marks)

Class 11 Biology · Chemical Coordination and Integration · Narayan Gurukul Academy (ClassApna)

General Instructions: (1) This paper has four sections — Section A (1×10), Section B (2×4), Section C (3×4) and Section D (5×2) — total 40 marks. Time allowed: 90 minutes.

(2) All questions are compulsory. No overall choice is given; internal choice, where allowed, is clearly marked.

(3) For MCQ questions choose the single correct option; for VSA answers write a single line.

(4) Take $g = 10 \text{ m/s}^2$. All symbols carry their usual meaning. Use of a calculator is not permitted.

Section A — MCQ & VSA ($10 \times 1 = 10$ marks)

- Hormones are secreted by
 - endocrine glands
 - exocrine glands
 - nerve cells only
 - muscles
- Hormones are transported by the
 - blood
 - lymph only
 - nerves
 - ducts
- The pituitary gland is located in the
 - sella turcica
 - neck
 - abdomen
 - thorax
- Thyroxine is secreted by the
 - thyroid gland
 - parathyroid
 - adrenal
 - pancreas
- The hormone that lowers blood glucose is
 - insulin
 - glucagon
 - thyroxine
 - adrenaline
- The hormone melatonin is secreted by the
 - pineal gland
 - thyroid
 - adrenal
 - pancreas
- The second messenger often formed by protein hormones is
 - cyclic AMP

- (B) ATP
 - (C) DNA
 - (D) RNA
8. Diabetes mellitus is caused by deficiency of
- (A) insulin
 - (B) glucagon
 - (C) thyroxine
 - (D) adrenaline
9. Define hormone.
10. What is a target cell?

Section B — Short Answer I ($4 \times 2 = 8$ marks)

11. Name the gland that secretes growth hormone.
12. Which hormone raises blood glucose?
13. What is the function of the thymus?
14. What causes exophthalmic goitre?

Section C — Short Answer II ($4 \times 3 = 12$ marks)

15. Distinguish between endocrine and exocrine glands.
16. Distinguish between insulin and glucagon.
17. Distinguish between protein and steroid hormone action.
18. Distinguish between diabetes mellitus and diabetes insipidus.

Section D — Long Answers ($2 \times 5 = 10$ marks)

19. (a) Describe the hormones of the pituitary and hypothalamus. (b) Describe the mechanism of hormone action.
20. (a) Explain the role of insulin and glucagon in blood glucose regulation. (b) Describe the disorders of the endocrine system.

Answer Key (Marking Scheme)

- Q1 — (A) endocrine glands. Q2 — (A) blood. Q3 — (A) sella turcica. Q4 — (A) thyroid gland. Q5 — (A) insulin. Q6 — (A) pineal gland. Q7 — (A) cyclic AMP. Q8 — (A) insulin.
- Q9 — A hormone is a chemical messenger secreted by an endocrine gland into the blood that acts on target cells.
- Q10 — A target cell is a cell bearing receptors for a particular hormone.
- Q11 — The anterior pituitary.
- Q12 — Glucagon.
- Q13 — It secretes thymosins that help in immune function.
- Q14 — Hyperthyroidism (excess thyroxine).
- Q15 — Endocrine glands are ductless and secrete hormones into blood; exocrine glands have ducts.
- Q16 — Insulin lowers blood glucose; glucagon raises it.
- Q17 — Protein hormones act via surface receptors and a second messenger; steroid hormones enter the cell and regulate gene expression.

Q18 — Mellitus: insulin deficiency, glucose in urine; insipidus: ADH deficiency, excess dilute urine.

Q19 — (a) Anterior pituitary (GH, TSH, ACTH, FSH, LH, prolactin), posterior pituitary (ADH, oxytocin); hypothalamus secretes releasing/inhibiting hormones. (b) Protein hormones via second messenger; steroid hormones via intracellular receptors and gene expression.

Q20 — (a) Insulin lowers glucose (uptake, glycogenesis); glucagon raises it (glycogenolysis). (b) Cretinism, dwarfism, acromegaly, diabetes mellitus, diabetes insipidus, goitre.