

Neural Control and Coordination — CBSE Pattern Test 2

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

Test 2 — CBSE Pattern (90 minutes, 40 marks)

Class 11 Biology · Neural Control and Coordination · 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)

- The autonomic nervous system is divided into
 - sympathetic and parasympathetic
 - central and peripheral
 - somatic and visceral
 - afferent and efferent
- The long process of a neuron that carries impulses away is the
 - axon
 - dendrite
 - cyton
 - nissl body
- Neurons that carry impulses away from the CNS are
 - motor neurons
 - sensory neurons
 - afferent neurons
 - interneurons
- The chemical released at a synapse is called a
 - neurotransmitter
 - hormone
 - enzyme
 - pigment
- The photoreceptors of the eye are
 - rods and cones
 - hair cells
 - taste buds
 - olfactory cells
- The respiratory and cardiovascular centres are located in the
 - medulla oblongata
 - cerebrum
 - cerebellum
 - thalamus
- A nerve impulse is transmitted as a
 - wave of depolarisation

- (B) chemical only
 - (C) physical wave only
 - (D) sound wave
8. The growth movement of a plant towards light is
- (A) phototropism
 - (B) geotropism
 - (C) thigmotropism
 - (D) hydrotropism
9. What is a neuron?
10. What is a reflex arc?

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

11. Name the two divisions of the autonomic nervous system.
12. What are nodes of Ranvier?
13. Name the photoreceptors of the eye.
14. What is a tropism?

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

15. Distinguish between the sympathetic and parasympathetic systems.
16. Classify neurons on the basis of structure.
17. Distinguish between rods and cones.
18. Name the parts of a reflex arc.

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

19. (a) Describe the organisation of the nervous system. (b) Explain the conduction of a nerve impulse.
20. (a) Describe the receptors for taste, smell and vision. (b) Describe the movements in plants with examples.

Answer Key (Marking Scheme)

- Q1 — (A) sympathetic and parasympathetic. Q2 — (A) axon. Q3 — (A) motor neurons. Q4 — (A) neurotransmitter. Q5 — (A) rods and cones. Q6 — (A) medulla oblongata. Q7 — (A) wave of depolarisation. Q8 — (A) phototropism.
- Q9 — A neuron is the structural and functional unit of the nervous system.
- Q10 — A reflex arc is the pathway taken by an impulse in a reflex action.
- Q11 — Sympathetic and parasympathetic.
- Q12 — Gaps in the myelin sheath of an axon.
- Q13 — Rods and cones.
- Q14 — A growth movement of a plant in response to a stimulus.
- Q15 — Sympathetic prepares the body for fight or flight; parasympathetic restores calm (rest and digest).
- Q16 — Unipolar, bipolar and multipolar.
- Q17 — Rods: dim-light vision, contain rhodopsin; cones: colour vision, high light intensity.
- Q18 — Receptor, sensory neuron, CNS, motor neuron and effector.

Q19 — (a) CNS (brain, spinal cord) and PNS (somatic, autonomic). (b) A wave of depolarisation transmitted along the axon; sodium-potassium pump maintains the resting potential.

Q20 — (a) Taste buds (taste), olfactory epithelium (smell), rods and cones (vision). (b) Tropic movements (phototropism, geotropism) and nastic movements (touch-me-not plant).