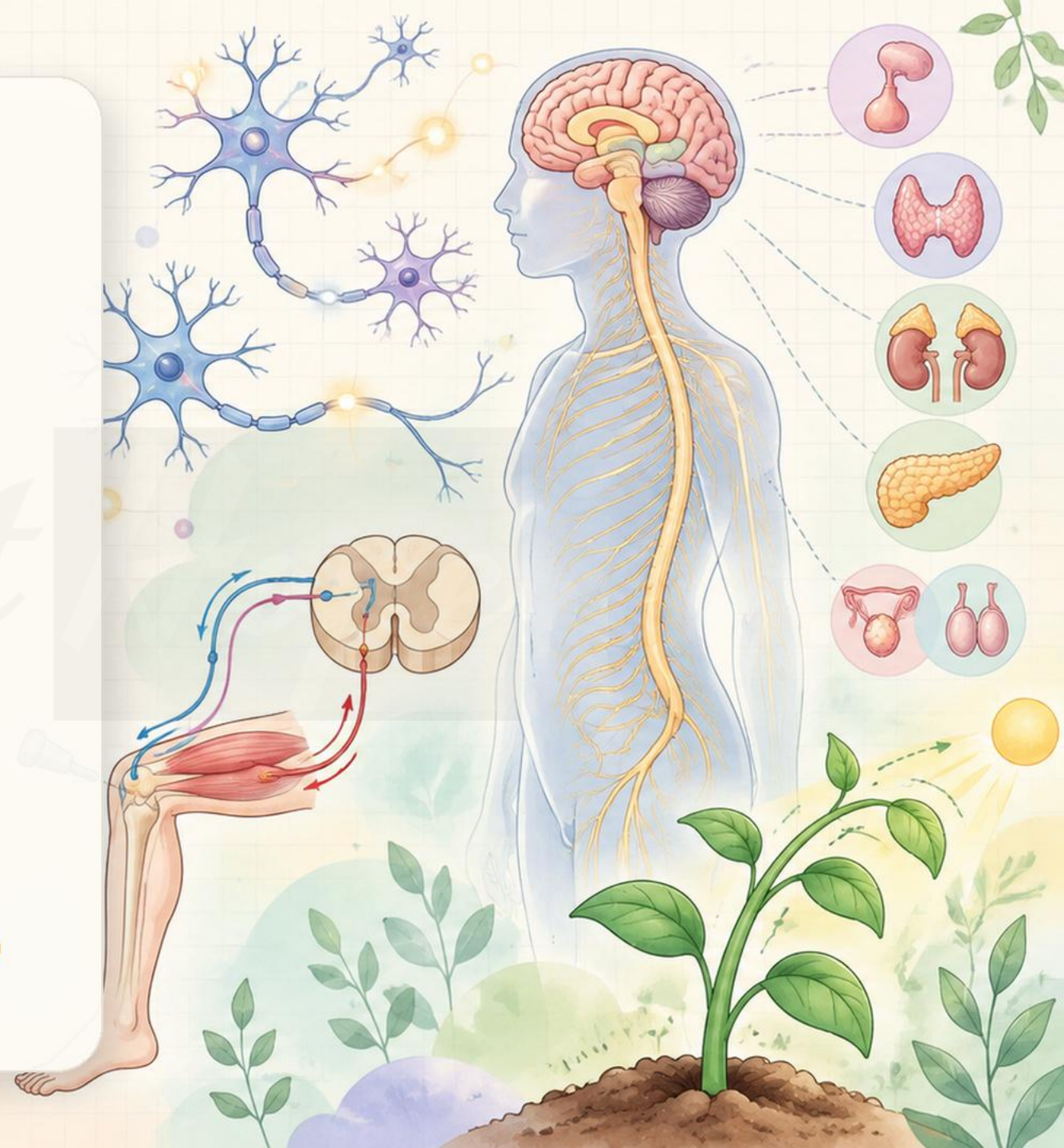


SCIENCE • CLASS 10

CHAPTER 6

Control and Coordination

NCERT SOLUTIONS



HORMONES, NEURONS AND BRAIN

Exercise 1 — Which is a plant hormone?

- (a) Insulin
- (b) Thyroxin
- (c) Oestrogen
- (d) Cytokinin

Answer: (d) Cytokinin.

It promotes cell division.

Exercise 2 — The gap between two neurons is called a:

- (a) Dendrite
- (b) Synapse
- (c) Axon
- (d) Impulse

Answer: (b) Synapse.

A signal passes across the synaptic gap using chemicals.

Exercise 3 — The brain is responsible for:

- (a) Thinking
- (b) Regulating heartbeat
- (c) Balancing the body
- (d) All of the above

Answer: (d) All of the above.

Different brain regions perform these functions.

FUNCTIONS OF RECEPTORS

Exercise 4 — What is the function of receptors in our body? What problems may arise if they do not work properly?

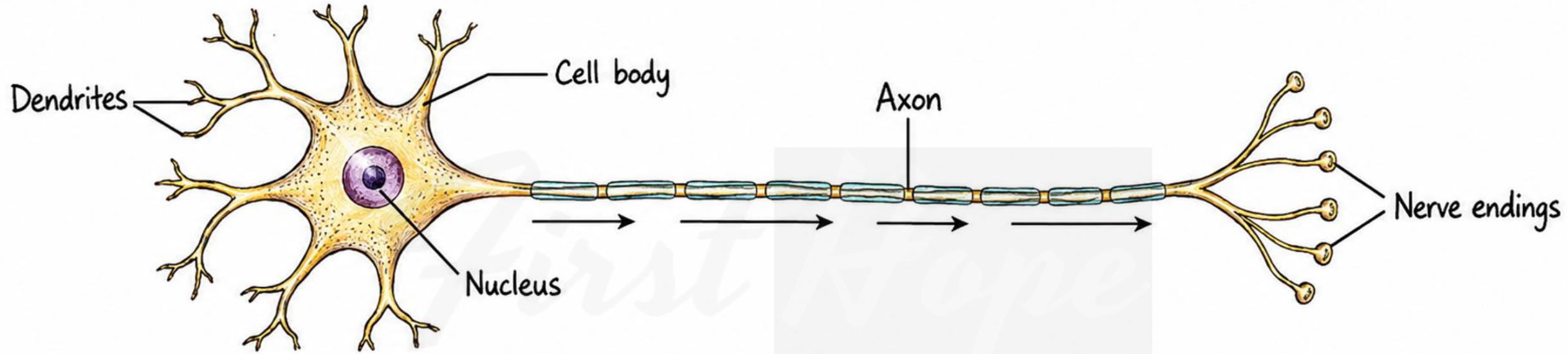
Receptors detect stimuli, such as light, sound, smell, taste, touch, heat and pain. They start signals that travel to the nervous system, allowing an appropriate response.

If receptors fail:

- Damaged smell receptors may make smells difficult to detect.
- Faulty hearing receptors may reduce hearing.
- Poor heat or pain detection may delay withdrawal from a hot object and allow injury.

STRUCTURE AND FUNCTION OF A NEURON

Exercise 5 — Draw the structure of a neuron and explain its function.



A neuron receives and transmits nerve impulses.

Dendrites receive signals. The impulse passes through the cell body and along the axon to the nerve endings.

At a synapse, chemicals released by the nerve endings carry the signal across the gap to the next cell.

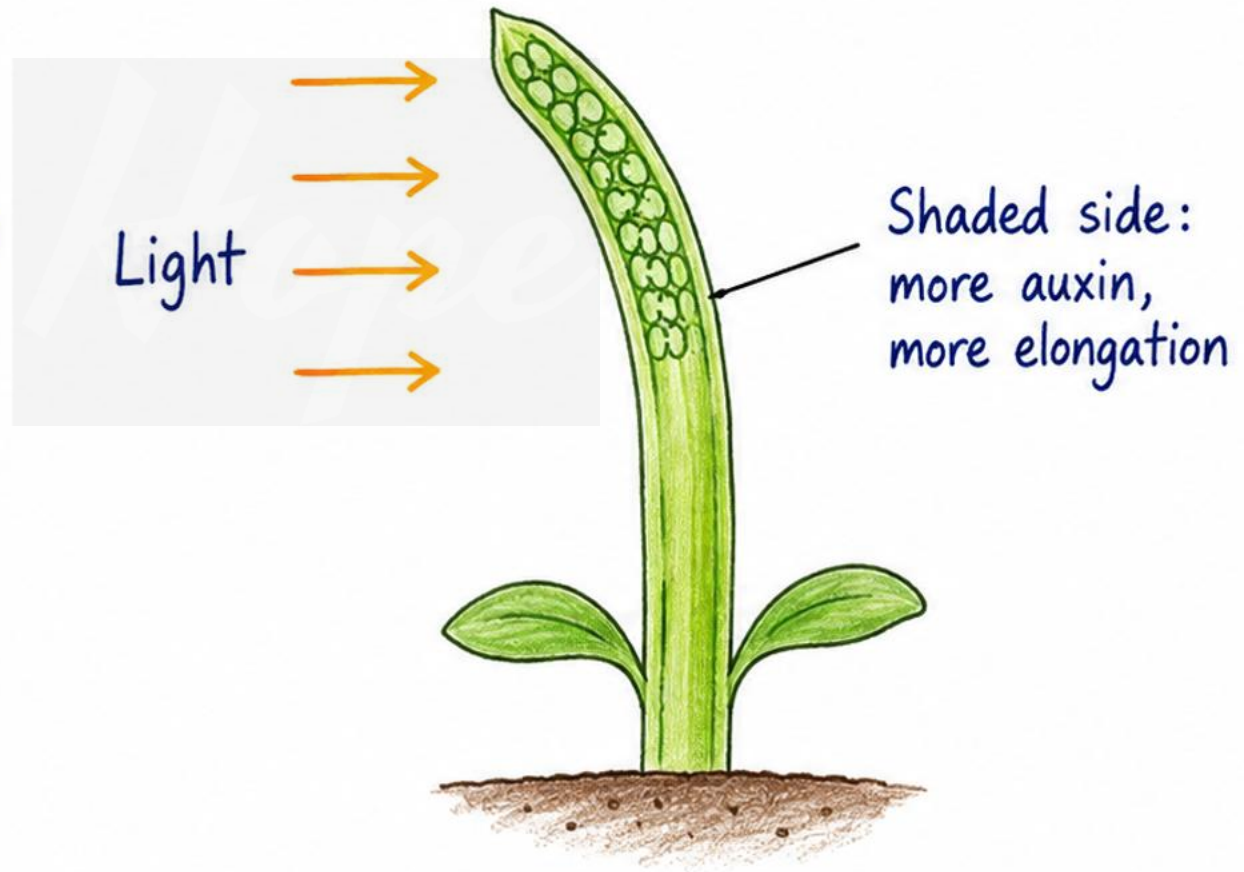
Direction: dendrites → cell body → axon → nerve endings

PHOTOTROPISM

Exercise 6 – How does phototropism occur in plants?

Phototropism is directional growth in response to light.

1. Auxin is produced near the shoot tip.
2. When light comes from one side, more auxin collects on the shaded side of the shoot.
3. Auxin causes cells on the shaded side to elongate more.
4. Unequal growth bends the shoot towards light: positive phototropism.



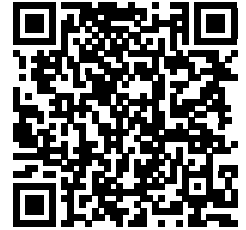


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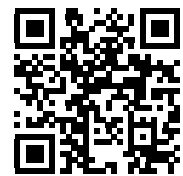


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