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Sub. BIOLOGY

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Questions and answers:

1. The brain is responsible for

(a) Thinking.

(b) Regulating the heartbeat.

(c) Balancing the body.

(d) all of the above.

Answer is (d) all the above

Brain is responsible for thinking, brain regulates the heartbeat, and it balance the body.

2. What is the function of receptors in our body? Think of situations where receptors do not work properly. What problems are likely to arise?

Receptors are present throughout our body mainly sense organs. Receptors collect the information about changes that happen around us and send the signal to information to brain which render effector mechanism against the change. When receptors do not work properly, the environmental stimuli are not able to create nerve impulses and body does not respond.

3. Draw the structure of a neuron and explain its function.

Neurons are nerve cells which are functional units of the nervous system. Three main parts of neurons are Dendrites, Axons and cell body.

Dendrite: Detects information and sends it to cell body

Cell Body: Maintains growth of the cell

Axon: Conducts messages away from cell body and signal to next neuron.

4. What is the need for a system of control and coordination in an organism?

There are various organs in an organism.

These organs must be carefully controlled and coordinated for the survival of an organisms.

In the body of an organism various fluids are secreted from the glands of the endocrine system.

These hormones are responsible for the overall growth and development of an organism.

All others daily decision that includes voluntary and involuntary action are controlled by central nervous system (CNS).

Coordination is needed for all human activities we perform. Our nervous system receives information from surroundings which is processed and response is elicited. The endocrine system (hormonal system) helps in integrating various metabolic activities like reproduction, development, and all reflex actions (cope up with various give up situations).

The hormonal system in plants helps in process of photosynthesis; they need carbon dioxide, water and sunlight. The stomatal opening in leaves opens up to allow in carbon dioxide gas, the roots bend towards water and the stem grows towards sunlight, the tendrils in climbing pants are supported by the hormonal system of the plant body.

Thus, we have need of control and coordination system in an organ reflex .

5. How are involuntary actions and reflex actions different from each other?

Reflex actions	Involuntary actions
1. Rapid automatic responses to a stimulus without the conscious involvement of the brain	1. Occurs without the consciousness of an organism
2. Controlled by spinal cord	2. Controlled by mid brain or medulla oblongata
3. Very quick and instantaneous	3. Relatively slower
4. May involve any muscle or a gland	4. Involves only smooth muscles
5. Can be conditioned	5. Cannot be influenced by external conditioning

Examples: Blinking of eyes, salivation

Examples: Beating of heart, blood circulation

Draw the diagram of this chapter from NCERT .