

MARKS-30

Solved Paper

TIME- 70 MINUTES

Instructions:

- Questions : 1 to 5 – 1 Mark each
- Questions : 6 to 9 – 2 Marks each
- Questions : 10 to 13 – 3 Marks each
- Question 14 – 5 Marks

1. Which endocrine gland is unpaired?

Ans: Testes are paired glands presents in males, secretes male sex hormone. Pituitary gland is present just below the brain and is unpaired.

2. Which part of the brain controlled posture and balance of the body?

Ans: Cerebellum which part of the Hind brain controlled posture and balance of the body

3. Where in a neuron, conversions of electrical signal to a chemical signal occur?

Ans: at synape

4. Which gland secretes digestive enzyme as well as hormones?

Ans: Pancreas is the gland which secretes digestive enzymes as well as hormones. It secretes Pancreatic Juice (containing Amylase, Trypsin and Lipase) and it also secretes Insulin and Glucagon hormones essential for regulation of blood glucose levels

5. We suddenly withdraw our hand when a pin pricks. Name the type of response involved in this action.

Ans: Reflex action

6. What is a tropic movement? Explain with an example.

Ans: The movements of plants in the direction of stimulus (positive) or away from it (negative) are called tropic movements.

Phototropism: Phototropism is a tropism where the stimulus is light . Plants grow towards the sun, so they can make food through photosynthesis

Geotropism: A geotropism is a tropism where the stimulus is gravity. The downward growth of roots and the upward growth of shoots

Chemotropism: The movement or the growth of the organism in response to a chemical stimulus. The ovary of a flower secretes some chemicals which produce a positive chemotropic response attracting the pollen tube towards itself

7. Mention the name of secretory part / gland and function of following hormones.-(a) Insulin (b) Progesterone (c) Oxytocin

Ans: (a) Insulin -beta cells of pancreas, control sugar level

(b) Progesterone - corpus luteum of ovary, maintains pregnancy and fixes the embryo to uterus wall.

(c)Oxytocin -Pituitary gland, milk secretion, birth hormone

8. Why are some patients of diabetes treated by giving injections of insulin?

Ans: Insulin that control sugar level in the body. Insulin converts extra sugar present in blood into glycogen.

9. On touching a hot plate, you suddenly withdraw your hand. a) Which category of neurons became active first, b) and which one next? c) What name is given to the microscopic gap between two adjacent neurons?

Ans: a) On touching a hot plate, first the sensory neurons are activated, which take the information to the brain or spinal cord.

b) Next, the motor neurons become active and bring the impulses from the brain to the muscles. On receiving these impulses the muscles contract and the hand is immediately removed from the hot plate.

c) Synapse.

10. Why is the flow of signals in a synapse from axonal end of one neuron but not the reverse?

Ans: When electrical signal reaches axon end of neuron , it releases chemical substance . This chemical diffuse towards the dendrites end of next neuron where it generate electrical impulses. Hence, Chemical signals is converted into electrical signals at the axon ends. Since these chemicals are absent at dendrites end of neuron, the electrical signals cannot be converted into chemical signals.

11. What are reflex actions? Explain reflex arc.

- ❖ Ans: Reflex action- Spontaneous, involuntary and automatic response to a stimulus to protect us from harmful situations. Eg. On touching a hot object unknowingly we instantly withdraw our hand.
- ❖ Reflex arc- The pathway of the reflex action is called Reflex arc.

Stimulus → Receptor organ → Sensory nerve → Spinal cord → Effectors organ → Response

12. What are the major parts of the brains? Mention the functions of each.

Ans: Fore brain

Cerebrum-

- (i) Main thinking and largest part of the brain.
- (ii) It has 3 main areas-
 - a) Sensory nerves to receive impulses from sense organs via Receptors
 - b) Motor area- control voluntary movements.
 - c) Association areas- Reasoning, learning & intelligence.

Thalamus – It relays sensory information to the Cerebrum

Hypothalamus- It forms the link between Nervous system & Endocrine system

Mid brain- It connects Fore brain and Hind brain. Controls reflex of eyes & ears

Hind brain- Connects the Fore brain & Hind brain

Cerebellum – Controls & coordinates muscular movements, maintaining body posture and equilibrium.

Pons- Acts as a bridge between brain & spinal cord

Medulla oblongata- Controls involuntary actions like blood pressure, salivation, vomiting, etc.

13. How does chemical co – ordination take place in animals?

Ans: Chemical coordination in animals takes place through hormones secreted by the endocrine glands. Hormones are transported by blood. When the hormone reaches the target organs, their cells have special molecules on their surface to detect this hormone. They recognize the information carried by the particular hormone and respond accordingly

14. Name the various plant hormones.

Ans: Plant hormones (Phytohormones)

1. Auxins- Help in growth of root & shoot tips.
2. Gibberellins- Help in vegetative growth
3. Cytokinins- Promote cell division
4. Abscissic acid - Inhibits growth & causes wilting (falling) of leaves