CBSE Test Paper-05

Chapter 07 Science Control and Coordination

1. Which of the following is not the function of Auxins

   A. cell enlarge mnt

   B. Induces dormancy

   C. Root formation

   D. Over come apical dominance secreted by posterior lobe **(1)**

   a. A and D
   b. B and D
   c. B and C
   d. All of these

2. Which Hormone maintain calcium and phosphate levels in the blood ? **(1)**

   a. calcitonin
   b. Thymosin
   c. Thyroxin
   d. Melatonin

3. What is BMR? **(1)**

   a. Basic metabolic rate
   b. Basal metabolic respiration
   c. Basal metabolism rate
   d. Basic metabolic respiration

4. If the parathyroid gland is damaged, there may be a **(1)**

   a. rise in phosphorus level
   b. rise in calcium level
   c. fall in calcium level
   d. fall in phosphorus level

5. Internal activities are controlled by:- **(1)**

    1. CNS
    2. ANS
    3. PNS
    4. None of these

6. Why is it advised to use iodised salt in the diet? **(1)**

7. Name the endocrine part of pancreas. **(1)**

8. What are inhibitory hormones? **(1)**

9. What is the simplest kind of nerve pathway? **(1)**

10. How involuntary actions and reflex actions are different form each other? **(3)**

11. Why homologous series of carbon compounds are so-called? Write the chemical formula of two consecutive members of a homologous series and state the part of these compounds that determines their (i) Physical properties, and (ii) chemical properties. **(3)**

12. How does feedback mechanism regulate the hormone secretion? **(3)**

13. Why is the flow of signals in a synapse from axonal end of one neuron to dendritic end of another neuron but not the reverse? **(3)**

14. Nervous and hormonal system together perform the function of control and co-ordination in human beings". Justify the statement. **(5)**

15. Explain the reflex action by means of reflex arc with diagram. **(5)**

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Answers

1. b. B and D

   Explanation: The main function of auxin is to help plants grow. Auxin stimulates plant cells to elongate, and the apical meristem of a plant is one of the main places that auxin is produced.

2. a. calcitonin

   Explanation: Calcitonin hormone maintains the calcium and phosphate levels in the blood. It provides strong bones and healthy teeth.

3. c. Basal metabolism rate

   Explanation: BMR stands for Basal metabolic rate, and it refers to number of calories that human body needs to function is called basal metabolic rate.

4. c. fall in calcium level

   Explanation: In hypocalcemia, the calcium level in blood is too low. A low calcium level may result from a problem with the parathyroid glands, as well as from diet, kidney disorders, or certain drugs.

5. a. CNS

   Explanation: Central nervous system (CNS) controls the activities of internal organs such as hormone release, movement of food through the stomach and intestines, and the sensations from and muscular control to all internal organs.

6. Iodised salt in the diet is advisable because it contains iodine, which is an essential element for the synthesis of thyroxine hormone secreted from thyroid gland. The deficiency of iodine in the diet causes goitre.

7. The endocrine pancreas refers to those cells within the pancreas that synthesize and secrete hormones. The endocrine portion of the pancreas takes the form of many small clusters of cells called **islets of Langerhans** or, more simply, islets.

8. Inhibitory hormones are secreted by the hypothalamus(commander of the endocrine

glands). They inhibit the secretion of certain hormones secreted from pituitary gland.

9. The path through which nerves signals involved in a reflex action travel is called the reflex arc.

10.

Involuntary action	Reflex action
The action which we cannot be controlled by us is called involuntary action.	An action or response which is immediate and that does not need processing by the brain is called reflex action.
Involuntary actions are controlled by brain	Reflex actions are controlled by spinal cord.
Example : coughing, breathing etc	Example : Removal of hand on touching hot objects.

11. Carbon compounds are named as homologous series because they are derived from same general formula, having same functional group, similar chemical properties and show gradation in physical properties. Each member differs from successive member by - CH_2

    The two consecutive members of alkane series are methane (CH_4) and ethane (C_2H_6). These members of a homologous series show gradual change in their physical properties with increase in molecular masses. Their molecular masses and functional groups determine their physical and chemical properties, respectively.

12. Hormones help to maintain homeostasis by their integrated action and feedback control. Feedback control is mostly negative and rarely positive. In negative feedback control, synthesis of hormone slows or halts when its level in the blood rises above normal. In positive feedback control, an accumulating biochemical substance increases its own production.

13. When an electrical signal reaches the axonal end of a neuron, it releases a chemical substance. This chemical diffuses towards the dendrite end of next neuron where it generates an electrical impulse or signal. Hence, the electrical signal is converted into a chemical signal at the axonal end. Since these chemicals are absent at the dendrite

end of the neuron the electrical signal, cannot be converted into chemical signal.

14. The nervous system controls and coordinates all the functions in the body. It carries out its functions in close coordination with the hormonal system. Nerves don't reach every nook and corner of the body and hence needs assistance from the hormones to control all the parts of the body. Moreover, while the nervous control is somewhat faster, hormonal control is slower. Hormonal control is mainly based on feedback mechanism and tells the body to either pace up or slow down; as per the situation. Nervous control, on the other hand, is more of a direct control. Both of them complement each other. Thus, it can be said that nervous and hormonal systems together perform the function of control and coordination in human beings.

15. In man and other vertebrate animals, there are two types of actions viz. voluntary and involuntary actions. The actions carried out and regulated by brain are voluntary actions. The actions carried out without direct concern of brain are involuntary actions. The involuntary actions are conducted by spinal cord and are known as reflex actions.

    Reflex arc: For a reflex action, the path taken by a stimulus from some reception to one or more effectors is known as reflex arc. Once the sensory organ is excited by some stimuli, the message is carried by the sensory nerves to the spinal cord. From the spinal cord the directions carried by the motor nerve fibres to one or more effector organs. The whole action is completed instantaneously. Some of the examples of reflex actions are blinking of eyes, sneezing, coughing in response to foreign particle that has entered in eye, nose, the throat respectively.