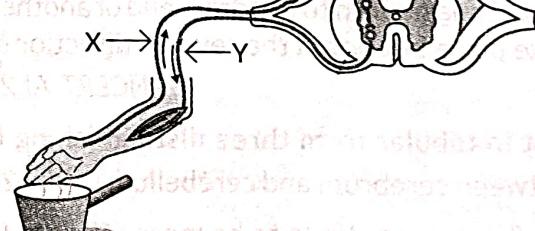


6.1 Animals-Nervous System

SAI (2 marks)

10. In the diagram given below, name the labelled parts X and Y. Mention one function for each.



(2024 C) **R**

11. Name the parts of the nervous system which are involved in the following activities :

 - Maintaining body posture
 - Salivation
 - Hunger
 - Answering a question

(2024 C) **U**

12. Name the part of brain which is responsible for the following actions :

 - Maintaining posture and balance
 - Beating of heart
 - Thinking
 - Blood pressure

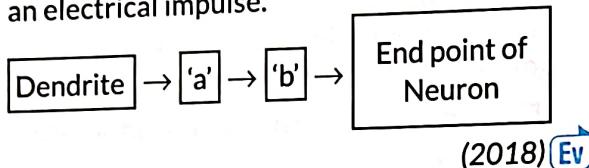
(2023) **R**

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13. (a) How is the brain and spinal cord protected in human beings?
 (b) State one main function of (i) Medulla and (ii) Cerebellum. (2023) R

14. What is a nerve impulse? State the direction followed by a nerve impulse while travelling in the body of an organism. (2019)

15. (a) Name one gustatory receptor and one olfactory receptor in human beings.
 (b) Write 'a' and 'b' in the given flow chart of neuron through which information travels as an electrical impulse.



16. Write the main functions of the following:
 (a) sensory neuron
 (b) cranium
 (c) vertebral column
 (d) motor neuron. (Board Term I, 2017)

SA II (3 marks)

17. Define reflex action. With the help of a flow chart show the path of a reflex action such as sneezing. (2024) Ap

18. Draw a diagram of neuron and name and label the part
 (a) where information is acquired,
 (b) through which information travels as an electric impulse, and
 (c) where the electric impulse must be converted into a chemical signal for onward transmission. (2019 C)

19. Why does the flow of signals in a synapse from axonal end of one neuron to dendritic end of another neuron take place but not in the reverse direction? Explain. (NCERT, AI 2019) U

20. List in tabular form three distinguishing features between cerebrum and cerebellum. (2019) An

21. "Reflex arcs continue to be more efficient for quick responses". Justify this statement giving reason. (Board Term I, 2017)

22. (a) Define reflex arc.
 (b) Trace the sequence of events which occur in our body when a bright light is focussed on your eyes. (Board Term I, 2016)

CBQ (4 marks)

23. In life there are certain changes in the environment called 'stimuli' to which we respond appropriately. Touching a flame suddenly is a dangerous situation for us. One way is to think consciously about the possibility of burning and then moving the hand. But

- our body has been designed in such a way that we save ourselves from such situations immediately. Name the action by which we protect ourselves in the situation mentioned above and define it.

- (ii) Write the role of (a) motor and (b) relay neuron. (1)
 (iii) (A) What are the two types of nervous system in human body?
 Name the components of each of them. OR

- (iii) (B) Which part of the human brain is responsible for:
 (a) thinking (b) picking up a pencil (c) controlling blood pressure (d) controlling hunger (2025) U

24. In animals the control and coordination is provided by nervous and muscular tissues. Nervous tissue is made of an organised network of nerve cells or neurons. In human beings, thinking is a complex activity which involves more complex mechanisms and neural connections. These are concentrated in the brain which is the main coordinating centre of the human body. The brain and spinal cord constitute the Central Nervous System which receives information from all parts of the body and integrates it.

- (a) How is the brain protected from shocks and injuries? (1)
 (b) Write the main functions of (i) sensory neuron and (ii) motor neuron in a reflex arc. (1)
 (c) Which part of the brain is involved in activities like (i) picking a pencil and (ii) vomiting? State whether these actions are voluntary or involuntary. (2)

- OR
 (c) How does the central nervous system communicate with other parts of the body to carry out various activities? Name two components of this system. (2) (2023 C)

LA (5 marks)

25. (i) Define a reflex arc. Why have reflex arcs evolved in animals? Trace the sequence of events which occur, when you suddenly touch a hot object.
 (ii) Name the part of nervous system which helps in communication between the central nervous system and other parts of the body. What are the two components of this system? (2024) An

26. What constitutes the central and peripheral nervous systems? How are the components of central nervous system protected? Which signals will get disrupted in case of a spinal cord injury? (2020 C) EV

6.2 Coordination in Plants

MCQ

27. The plant hormone present in greater concentration in the areas of rapidly dividing cells is
 (a) auxin
 (b) cytokinins
 (c) gibberellins
 (d) abscisic acid.  (2025) R
28. The plant hormone whose concentration stimulates the cells to grow longer on the side of the shoot which is away from light is
 (a) cytokinins (b) gibberellins  (2025) U
 (c) adrenaline (d) auxins. (2025) U
29. The growth of the pollen tubes towards ovules is an example of
 (a) phototropism
 (b) hydrotropism
 (c) geotropism
 (d) chemotropism.  (2025) R
30. The movement of sunflowers is in response to a stimulus such as :
 (a) gravity (b) chemicals
 (c) day or night (d) water. (2024 C)
31. A plant growth inhibitor hormone which causes wilting of leaves is called
 (a) auxin (b) cytokinin  (2024) U
 (c) abscisic acid (d) gibberellin. (2024) U
32. In plants the role of cytokinin is
 (a) promote cell division
 (b) wilting of leaves
 (c) promote the opening of stomatal pore
 (d) help in the growth of stem. (2023) AP
33. Assertion (A) : A hormone called abscisic acid inhibits growth in plants.
 Reason (R) : The role of auxins is opposite to that of abscisic acid in plants.
 (a) Both (A) and (R) are true and (R) is the correct explanation of the assertion (A).
 (b) Both (A) and (R) are true, but (R) is not the correct explanation of the assertion (A).
 (c) (A) is true, but (R) is false.
 (d) (A) is false, but (R) is true. (2023 C) An
34. Assertion (A) : Plant hormones are chemicals produced in plants which help to coordinate growth, development and response to stimulus and environment.
 Reason (R) : Abscisic acid is a plant hormone that promotes cell division.
 (a) Both (A) and (R) are true and (R) is the correct explanation of the assertion (A).
 (b) Both (A) and (R) are true, but (R) is not the correct explanation of the assertion (A).
 (c) (A) is true, but (R) is false.
 (d) (A) is false, but (R) is true. (2020 C)

SA I (2 marks)

35. How is the movement of leaves of a sensitive plant different from the downward movement of the roots? (2024) An
36. Where are auxins synthesised in a plant? Which organ of the plant shows :
 (i) Positive phototropism
 (ii) Negative geotropism
 (iii) Positive hydrotropism (2023) R
37. Name a plant hormone responsible for bending of a shoot of a plant when it is exposed to unidirectional light. How does it promote phototropism? (2023) Ap
38. How do auxins promote the growth of a tendril around a support ? (2019)
39. State the two types of movements seen in plants. Give one example of each type. (Board Term I, 2016)

SA II (3 marks)

40. Name a plant growth hormone synthesised at the shoot tip. Explain its effect on the growth of a plant in response to light. (2024) An
41. Define geotropism. Draw a labelled diagram of a plant showing geotropic movement of its parts. (2020)
42. State the function of each of the following plant hormones :
 (a) Gibberellins
 (b) Auxins
 (c) Abscisic acid (2019 C)
43. What are plant hormones? Name the plant hormones responsible for the following :
 (i) Growth of stem
 (ii) Promotion of cell division
 (iii) Inhibition of growth
 (iv) Elongation of cells (NCERT, 2019) U
44. Define phototropism. Name the plant hormone which is responsible for phototropism. (NCERT, Board Term I, 2016)

LA (5 marks)

45. (i) Leaves of 'Chhui-mui' plant begin to fold up and droop in response to a stimulus. Name the stimulus and write the cause for such a rapid movement. Is there any growth involved in the movement?
 (ii) Define geotropism in plants. What is meant by positive and negative geotropism? Give one example of each type. (2024) An
46. (a) What are phytohormones? List four types of phytohormones. Where are these hormones synthesised?
 (b) What happens when a growing plant detects light? Explain in brief. (Board Term I, 2017) Ap
47. List the sequences of events that occur when a plant is exposed to unidirectional light, leading to bending of a growing shoot. Also name the hormone synthesised and the type of movement that takes place. (Board Term I, 2016) Cr

6.3 Hormones in Animals

MCQ

48. A doctor advised a person to take an injection of insulin because :
 (a) his heart was beating slowly.
 (b) his blood pressure was low.
 (c) he was looking short in height.
 (d) his pancreas was not secreting the required hormone in proper amounts. (2024 C) **Ap**

SA I (2 marks)

49. There is a hormone which regulates carbohydrate, protein and fat metabolism in our body. Name the hormone and the gland which secretes it. Why is it important for us to have iodised salt in our diet? (2024) **An**

50. Name the hormone secreted in scary situations by animals. Write any three responses which enable the animal body to deal with it. (2023)

SA II (3 marks)

51. (a) Name the glands that secrete :
 (i) Adrenaline
 (ii) Thyroxine
 (b) Explain with example how the timing and amount of hormone released are regulated in the human body. (2025) **U**

52. Name the gland and the hormone secreted by it in scary situations in human beings. List any two responses shown by our body when this hormone is secreted into the blood. (2023)

53. A squirrel is in a scary situation. Its body has to prepare for either fighting or running away. State the immediate changes that take place in its body so that the squirrel is able to either fight or run. (2020) **An**

54. Why is chemical communication better than electrical impulses as a means of communication between cells in a multicellular organisms? (2020)

55. A cheetah, on seeing a prey moves towards him at a very high speed. What causes the movement of his muscles? How does the chemistry of cellular components of muscles change during this event? (2020) **Ap**

56. Name the hormones secreted by the following endocrine glands and specify one function of each:
 (a) Thyroid
 (b) Pituitary
 (c) Pancreas. (2018)

57. (a) How does chemical coordination take place in animals?
 (b) It is advised to use iodised salt. Give reason. (NCERT Intext, Board Term I, 2017) **Ap**

58. (a) An old man is advised by his doctor to take less sugar in his diet. Name the disease from which

the man is suffering. Mention the hormone due to imbalance of which he is suffering from this disease. Which endocrine gland secretes this hormone?

- (b) Name the endocrine gland which secretes growth hormone. What will be the effect of the following on a person
 (i) deficiency of growth hormone
 (ii) excess secretion of growth hormone? (Board Term I, 2016) **CQ**

CBQ (4 marks)

59. A person while climbing up a rocky hill comes into a panic state and fear. His body starts reacting in a "fight-or-flight" condition to adjust to the dangerous and stressful situation.

Based on the above facts, answer the questions that follow.

- (a) (i) Name the hormone secreted in the blood of the person in this situation. (2)

OR

- (a) (ii) Name the source gland of the hormone secreted in this condition. (2)

- (b) State any two responses in the body of the person as a result of the secretion of this hormone. (1)

- (c) How does the action of the chemical signal in terms of hormones differ from the electrical impulses via nerve cells? (1)

60. Answer question numbers 60(i) to 60(iv) on the basis of your understanding of the following information and related studied concepts.

Thyroid gland is a bilobed structure situated in our neck region. It secretes a hormone called thyroxine. Iodine is necessary for the thyroid gland to make thyroxine. Thyroxine regulates carbohydrates, protein and fat metabolism in the body. It promotes growth of body tissues also. When there is an excess of thyroxine in the body, a person suffers from hyperthyroidism and if this gland is underactive it results in hypothyroidism. Hyperthyroidism is diagnosed by blood tests that measure the levels of thyroxine and Thyroid Stimulating Hormone (TSH). Hypothyroidism is caused due to the deficiency of iodine in our diet resulting in a disease called goitre. Iodised salt can be included in our diet to control it.

- (i) Where is thyroid gland situated?
 (ii) State the function of thyroxine in human body.
 (iii) What is hyperthyroidism?
 (iv) How can we control hypothyroidism? (2020) **Ap**

61. Question numbers 61(i) to 61(iv) are based on table given below.

Study the table in which the levels of Thyroid Stimulating Hormone (TSH) in women are given and answer the questions that follow on the basis of

understanding of the following paragraph and the related studied concepts :

Age Range	Normal (mU/L)	Low (mU/L)
18-29 years	0.4-2.34 mU/L	< 0.4 mU/L
30-49 years	0.4-4.0 mU/L	< 0.4 mU/L
50-79 years	0.46-4.68 mU/L	< 0.46 mU/L

Women are at greater risk for developing abnormal TSH levels during menstruation, while giving birth and after going through menopause. Around 5% of women in the United States have some kind of thyroid problem compared to 3% of men. Despite claims that high TSH increases your risk for heart disease, a 2013 study found no link between high TSH and heart diseases. But a 2017 study showed that older women are especially at risk for developing thyroid cancer if they have high TSH levels along with thyroid nodules.

- (i) A 35 years old woman has TSH level 6.03 mU/L. What change should she bring in her diet to control this level?
- (ii) When do women face a greater risk of abnormal TSH level?
- (iii) State the consequence of low TSH level.
- (iv) Name the mineral that is responsible for synthesis of hormone secreted by thyroid gland. (2020) CFQ

62. Question numbers 62(i) to 62(iv) are based on the table and related information in the passage given below.

Thyroid Stimulating Hormone (TSH) stimulates thyroid gland to produce thyroxine. Study the table given below.

Table : TSH levels during pregnancy

Stage of pregnancy	Normal (mU/L)	Low (mU/L)	High (mU/L)
First trimester	0.2-2.5	< 0.2	2.5 - 10
Second trimester	0.3-3.0	< 0.3	3.01 - 4.5
Third trimester	0.8-5.2	< 0.8	> 5.3

It is important to monitor TSH levels during pregnancy. High TSH levels and hypothyroidism can especially affect chances of miscarriage. Therefore, proper medication in consultation with a doctor is required to regulate/control the proper functioning of the thyroid gland.

- (i) Give the full form of TSH.
- (ii) State the main function of TSH.
- (iii) Why do TSH levels in pregnant women need to be monitored?
- (iv) A pregnant woman has TSH level of 8.95 mU/L. What care is needed for her? (2020)

LA (5 marks)

63. (a) Name the hormone secreted by (i) Pituitary, and (ii) Thyroid stating one main function of each. Name the disorder a person is likely to suffer from due to the deficiency of the above mentioned hormones.
 (b) How is the timing and amount of hormone released regulated? Explain with an example. (2020 C)
64. (a) Name one organ each where growth hormone is synthesised in man and plant.
 (b) List the sequence of events that occur when a plant is exposed to unidirectional light, leading to bending of a growing shoot. Also name the hormone and the type of movement. (2020)

CBSE SAMPLE QUESTIONS

6.1 Animals-Nervous System

MCQ

- There was a cerebellar dysfunction in a patient. Which of the following activities will get disturbed in this patient as a result of this?
 - (a) Salivation
 - (b) Hunger control
 - (c) Posture and balance
 - (d) Regulation of blood pressure (2024-25)
- Receptors are usually located in sense organs. Gustatory receptors are present in
 - (a) tongue
 - (b) nose
 - (c) eye
 - (d) ear. (2023-24) R

SAI (2 marks)

- How is the mode of action in beating of the heart different from reflex actions? Give four examples. (2022-23)

6.2 Coordination in Plants

MCQ

- Observe the three figures given below. Which of the following depicts tropic movements appropriately?



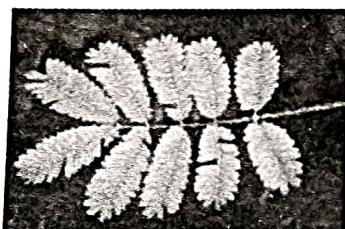
- (a) B and C
 (b) A and C
 (c) B only
 (d) C only (2022-23)

CBQ (4 marks)

5. Mohan and Rohit observed that shoots of a plant growing in shade bend towards the sunlight. Whereas, leaves of 'Touch me not' plant fold and droop soon after touching. They were curious to know how these movements occur in plants.



A. Shoots of a plant bending towards light



B. Folding of leaves 'Touch me not' plant

In order to help them understand the movements in the plants, answer the following questions:

Attempt either subpart (a) or (b).

- (a) What causes the bending of shoots in the plants as shown in figure A? (2)

OR

- (b) What causes the folding of the leaves in 'Touch me not' plant as shown in figure B? (2)

- (c) Compare the movement of growth of the pollen tube towards ovule with the movements shown in part A of the above figure. (1)

- (d) Compare the movement shown in figure B with the movement of body parts in the animals. (1)

(2024-25) (Ev)

6.3 Hormones in Animals**MCQ**

6. Patient X was suffering from a pancreatic condition due to which the pancreas was not functioning adequately. Which of the following is a doctor likely to suggest to such an individual?
- including a large amount of protein in the diet
 - eating a diet with low-fat content
 - eating only carbohydrates
 - including only liquid foods

(2023-24) APQ

SA II (3 marks)

7. We are advised to take iodised salt in our diet by doctors. Justify its importance in our body.

(2023-24) (An)

8. In animals, hormones can be secreted by one organ and can act on multiple organs. Justify this statement by explaining the effect of a single animal hormone on three organs.

(2023-24) APQ

LA (5 marks)

9. (a) A doctor has advised Sameer to reduce sugar intake in his diet and do regular exercise after checking his blood test reports. Which disease do you think Sameer is suffering from? Name the hormone responsible for this disease and the organ producing the hormone.

- (b) Which hormone is present in the areas of rapid cell division in a plant and which hormone inhibits the growth? (2023-24) CFQ (An)

10. (a) Sagar saw a beautiful rose and smelled it. As he was smelling it, he happened to touch a thorn and pull his hand away. State two differences and similarities each in the way the nervous system performs the two actions.

- (b) Are all involuntary actions reflex actions? Justify. (2023-24) APQ