

**COMPETENCY BASED QUESTIONS, 2022-23**

**CLASS- X, BIOLOGY**

**CHAPTER: CONTROL AND COORDINATION**

**TOPIC 1– NERVOUS TISSUE**

1. Which of the following parts make the peripheral nervous system?

|  |  |
| --- | --- |
| i.  | Spinal cord |
| ii. | Spinal nerves |
| iii. | Cranial nerves |

A) Only (i)

B) Only (i) and (ii)

C) Only (ii) and (iii)

D) All of three

2. Which of the following statements distinguishes a motor neuron from a sensory neuron?

|  |  |
| --- | --- |
| i.  | It carries information to the brain. |
| ii. | It carries impulses away from the central nervous system. |
| iii. | Motor neurons carry information to the brain and impulses from the brain. |

A) Only (i)

B) Only (i) and (ii)

C) Only (ii)

D) All of three

3. Which of the following is the correct sequence of the components in the transfer of impulses in a reflex arc?

|  |  |
| --- | --- |
| i.  | Sensory nerve |
| ii. | Sensory organ |
| iii. | Muscle |
| iv. | Motor nerve |

A) i →ii →iii → iv

B) iv → iii → ii → I

C) ii → i → iv → iii

D) iii → iv →i → ii

4. Which of the following is/are the characteristic feature of reflex action?

A) It is a fast response.

B) It is an automatic response.

C) It is an involuntary action.

D) All of these

5. Identify ‘X’ and its function.



A) X- Ribosome- Synthesizes protein

B) X- Lysosome- produces enzyme

C) X- Vesicle- Release neurotransmitter

D) X- Granule- Stores starch

**ASSERTION AND REASONING QUESTIONS**

**Following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:**
(a) Both A and R are true and R is the correct explanation of A.
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**6. Assertion (A):**Animals can react to stimuli in different ways.
**Reason (R):** Animals have a nervous system and an endocrine system involving hormones.

**7. Assertion (A):**Reflex actions are automatic and rapid responses to stimuli.
**Reason (R):** These actions are controlled by the brain.

**CASE STUDY BASED QUESTIONS**

When we touch a hot plate unknowingly, then this heat is sensed by a receptor P present in our fingers. The receptor triggers an impulse in neuron Q which transmits the message to an organ R which is a part of the central nervous system. Here the impulse is passed on to a neuron S which in turn passes it to a yet another neuron T. The neuron T passes the impulse to a tissue U in our arm. The tissue U then contracts and pulls our hand away from the hot plate.

1. What is the name of receptor P?

A. Thermoreceptor

B. Olfactory receptors

C.Taste receptors

D.None of the above

2. Name the organ R.

A. Heart

B. Spinal Cord

C.Kidney

D.Lungs

3. What name is given to the phenomenon in which hand is pulled away quickly from the hot plate?

A. Reflex action

B. Thermal action

4. Name the effector in this whole process.

A. Muscle (of arm)

B. Muscle (of leg)

C. Bone of arm

**TOPIC- HUMAN BRAIN**

1. Which of these labeled parts controls peristalsis movement?



A) W

B) X

C) Y

D) Z

2. When Anvesh’s cerebellum is injured in an accident, Anvesh is unable to do which of t he following actions?

A) Hand movements

B) Balancing of body

C) Coordinate his body movements

D) All of these

3. [The medulla oblongata of the brain controls which of the following actions?](https://www.studyadda.com/question-bank/10th-class/science/control-and-coordination/control-and-co-ordination/2149)

A) Heart beat

B) Peristalsis

C) Body balance

D) Both (a) and (b)

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**Assertion (A):**The brain is also known as the central nervous system.
**Reason (R):** Central nervous system only controls and regulates the voluntary actions.

**Assertion (A):**Medulla oblongata causes reflex actions like vomiting, coughing and sneezing.

**Reason (R):** It has many nerve cells that control autonomic reflexes.

**CASE STUDY BASED QUESTIONS**

The organ A which is located inside the skull of our body is protected by a bony box B and it is surrounded by three membranes C. The space between the membranes is filled with a liquid D which protects the organ A from mechanical shocks. The organ A in combination with another organ E makes up the central nervous system.

1. What is organ A?

A) Brain

B) Heart

C) Lungs

D) Kidneys

2. Name B.

A) Meninges

B) Cranium

C) Spinal cord

3. Name the organ E.

A) Meninges

B) Cranium

C) Spinal cord

4. While walking barefooted, if we happen to step on a sharp piece of stone, we immediately lift our foot up. Which of the two organs, R or E, is directly involved in this action?

A) A

B) E

**TOPIC- CONTROL AND COORDINATION IN PLANTS**

[1. Which of the following hormones prevents water loss from plants?](https://www.studyadda.com/question-bank/10th-class/science/control-and-coordination/control-and-co-ordination/2149)

A) Gibberellins

B) NAA  (Naphthalene acetic acid)

C) Indole acetic acid

D) ABA

[2. Which of the following hormones causes the shedding of leaves and fruits?](https://www.studyadda.com/question-bank/10th-class/science/control-and-coordination/control-and-co-ordination/2149)

A) Gibberellins

B) NAA (Naphthalene acetic acid)

C) Indole acetic acid

D) Abscisic acid

[3. Which of the following movements involves the opening and closing of flowers?](https://www.studyadda.com/question-bank/10th-class/science/control-and-coordination/control-and-co-ordination/2149)

A) Nastic movement

B) Tropic movement

C) Mutation

D) Autonomic movement

4. [Which of the following involves growth movement of the plant or plant part towards the soil?](https://www.studyadda.com/question-bank/10th-class/science/control-and-coordination/control-and-co-ordination/2149)

 A) Hydrotropism

B) Geotropism

C) Phototropism

D) Thigmotropism

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**Assertion (A):**The effect of auxin hormone on the growth of root is exactly opposite to that on a stem.
**Reason (R) :**Auxin hormone increases the rate of growth in root and decreases the rate of growth in stem.

**Assertion (A):**Auxins are in the growing tips of plant.
**Reason (R):** Auxin concentration is highest at the tip of the root.

**CASE STUDY BASED QUESTIONS**

The plants do not have a nervous system and sense organs like eyes, ears, or nose, etc., like the animals, but they can still sense things. The plants can sense the presence of stimuli like light, gravity, chemicals, water, and touch, etc., and respond to them. The plants can sense things like light, gravity, chemicals, water, and touch, etc., by the action of hormones in them. The stimuli like light, gravity, chemicals, water, and touch, etc., are called environmental changes. So, we can also say that the plants coordinate their behaviour against environmental changes by using hormones.The hormones in plants coordinate their behaviour by affecting the growth of a plant. And the effect on growth of the plant can result in the movement of a part of the plant like shoot (stem) or root, etc.

1. Any change in the environment to which an organism responds is called
A) stimulus
B) coordination
C) response
D) hormone

2. Roots of plants are:
A) positively geotropic
B) negatively geotropic
C) positively phototropic
D) None of these

3. **The movement of sunflower in accordance with the path of the sun is due to**

**A) phototropism**

**B) geotropism**

**C) chemotropism**

**D) hydrotropism**

**TOPIC- ENDOCRINE GLANDS**

1.[Where is thyroid gland located in the human body?](https://www.studyadda.com/question-bank/10th-class/science/control-and-coordination/control-and-co-ordination/2149)

A) It is attached to the ventral side of the brain.

B) It is located behind the larynx in neck.

C) It is located near the heart.

D) It is located in the abdominal cavity.

2. Read the given information and identify the gland.

|  |
| --- |
| Secreted by endocrine glands located at the top of the kidneys |
| Deficiency can cause Addison’s disease. |

A) Adrenal glands

B) Parathyroid gland

C) Pituitary gland

D) Thyroid gland

[3. Which of the following hormones plays an important function in embryo implantation?](https://www.studyadda.com/question-bank/10th-class/science/control-and-coordination/control-and-co-ordination/2149)

A) Testosterone

B) Insulin

C) Prolactin

D) Progesterone

[4. Which of the following is a heterocrine gland?](https://www.studyadda.com/question-bank/10th-class/science/control-and-coordination/control-and-co-ordination/2149)

A) Pituitary

B) Adrenal

C) Pancreas

D) Thyroid

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**Assertion (A):**Failure of secretion of growth hormone from an early age causes dwarfism in the patients.
**Reason (R):** Growth hormone stimulates the body growth and elongation of long bones.

**Assertion (A):**Exocrine glands are also known as ductless glands.

**Reason (R):** Thyroid gland directly pour its secretion i.e. thyroxine, into the blood.

**CASE STUDY BASED QUESTIONS**

Hormones are chemical substances secreted in very small amounts by specialised tissues in the body called endocrine glands. These hormones coordinate the activities of living organisms and also their growth. Hormones are made inside the body of an organism in very small amounts. They are secreted in small amounts by the endocrine glands and are poured directly into the blood and carried throughout the body by blood circulatory system. The hormones have their effect at the sites different from the sites where they are made. They act on specific tissues or organs.

**1. Which of the following endocrine glands is unpaired?**

**A) Adrenal**

**B) Testes**

**C) Pituitary**

**D) Ovary**

2. **Dramatic changes of body features associated with puberty are mainly because of the secretion of**

**A) oestrogen from testes and testosterone from ovary**

**B) estrogen from adrenal gland and testosterone from pituitary gland**

**C) testosterone from testes and estrogen from ovary**

**D) testosterone from thyroid gland and estrogen from pituitary gland**

3. **Answer the following:**

**(a) Which hormone is responsible for the changes noticed in females at puberty?**

**(b) Dwarfism results due to deficiency of which hormone?**

**(c) Blood sugar level rises due to deficiency of which hormone?**

**(d) Iodine is necessary for the synthesis of which hormone?**