CBSE Test Paper-02

Chapter 07 Science Control and Coordination

1. Match the following with correct response. **(1)**

(1) Response of plant to light	(A) Phototropism
(2) Response of plant to gravity	(B) Hydro tropism
(3) Response of plant to water	(C) Geotropism
(4) Response of plant to chemicals	(D) Chemotropism

a. 1-B, 2-D, 3-A, 4-C
b. 1-A, 2-C, 3-B, 4-D
c. 1-D, 2-A, 3-C, 4-B
d. 1-C, 2-B, 3-D, 4-A

2. Which hormone cause uterine contraction that leads to labour pain? **(1)**

a. vasopressin
b. thyroxin
c. Estrogen
d. Progesterone

3. Match the following with correct response. **(1)**

(1) Temporal lobe	(A) Speech facial muscular activites
(2) Parietal lobe	(B) Taste, smell touch and conscious association
(3) Occipital lobe	(C) Auditory reception
(4) Frontal lobe	(D) Visual perception

a. 1-B, 2-D, 3-A, 4-C
b. 1-D, 2-A, 3-C, 4-B
c. 1-A, 2-C, 3-B, 4-D
d. 1-C, 2-B, 3-D, 4-A

4. Name the place where largest number of neurons are found in the human body. **(1)**

   a. Stomach
   b. Heart
   c. Brain
   d. Lungs.

5. Progesterone and relaxin bring about changes in the body of a **(1)**

   a. Teenaged girl
   b. old woman
   c. Pregnant woman
   d. Young girl

6. List different parts of the human nervous system. **(1)**

7. Name the hormones secreted by pancreas. **(1)**

8. What do we call "movement of shoot towards the light"? **(1)**

9. Which hormone controls the metabolism of calcium and phosphorus in human beings? **(1)**

10. “Nervous and hormonal systems together perform the function of control and coordination in human beings.” Justify the statement. **(3)**

11. Differentiate between Spinal reflex and Cranial reflex **(3)**

12. How does our body respond when adrenaline is secreted into the blood? **(3)**

13. How does chemical co-ordination occur in plants? **(3)**

14. What are the major parts of the brain? Mention the functions of different parts. **(5)**

15. Why do we call pituitary gland as the master gland? Where is it located and what are its functions? **(5)**

CBSE Test Paper-02

Chapter 07 Science Control and Coordination

Answers

1. b. 1-A, 2-C, 3-B, 4-D

   Explanation: Phototropism refers to the movement of a plant toward a light source; the growth of the parts of plants in response to the force of gravity; the growth or turning of plant roots towards or away from moisture; Chemotropism may be defined as the movement or the growth of the organism in response to a chemical stimulus.

2. d. Progesterone

   Explanation: progestrone hormone is released during parturition that creates uterine contraction like situation that cause labour pain.

3. d. 1-C, 2-B, 3-D, 4-A

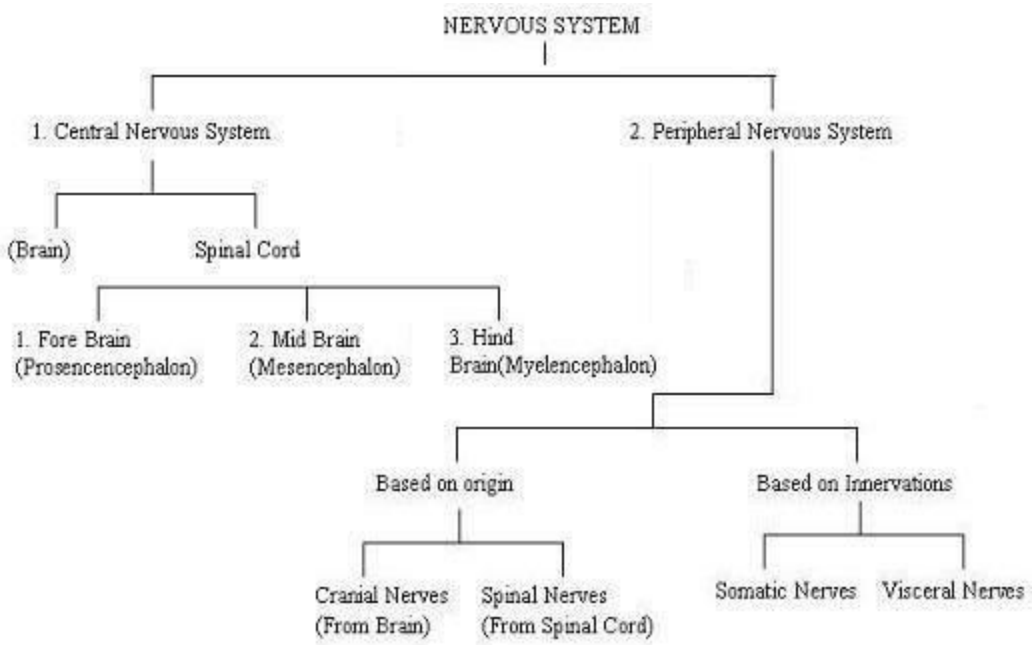
   Explanation: The Temporal Lobe mainly revolves around hearing and selective listening; The parietal lobes can be divided into two functional regions. One involves sensation and perception and the other is concerned with integrating sensory input, primarily with the visual system; The occiptial lobe is important to being able to correctly understand what your eyes are seeing; frontal lobe is used on everyday basis. You use it to make decisions, such as what to eat or drink for breakfast etc

4. c. Brain

   Explanation: Human brain consists of large number of neurons. A neuron is an electrically excitable cell that processes and transmits information through electrical and chemical signals.

5. c. Pregnant woman

   Explanation: Progesterone levels also are extraordinarily high during pregnancy that cause a laxity and relaxin hormone produced by the ovary it relaxes the mother's muscles, joints and ligaments to make room for the growing baby

6. 

7. Pancreas secertes Insulin and Glucagon hormone.

8. Positive phototropism is the movement of shoot towards light.

9. Parathyroid hormone

10. Control and coordination of functioning of various organ and organ system of the body is under the direct control of nervous system in close coordination with endocrine(hormonal) system. This control is achieved by a complex network of neurons which carry signals in the form of electric impulses; to and from the brain and controls the body function directly whereas, the endocrine system are the ductless glands which release chemical substances directly into the blood and reaching the target site for action.
    Nervous and hormonal systems are complementary to each other. Thus, it can be said that nervous and hormonal system together perform the function of control and coordination in human beings.

11.

Spinal reflex	Cranial reflex
1) It occurs through the spinal nerves.	1) It occurs through the cranial nerves.
2) It is controlled by the spinal cord.	2) It is controlled by the brain.

12. When adrenaline is secreted into the blood, it prepares our body for emergency

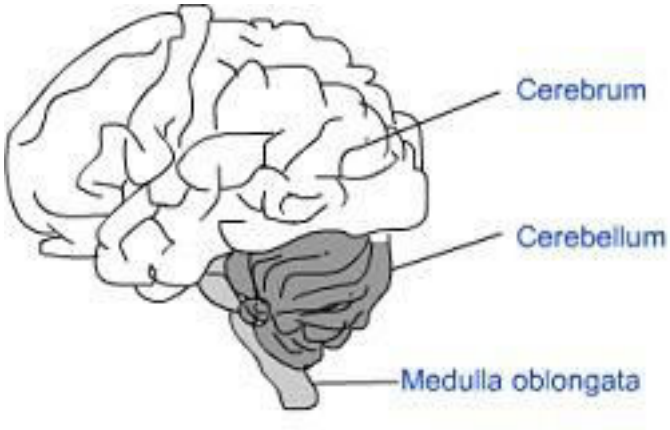
action. It speeds up heart beat and breathing, raises blood pressure and allows more glucose to go into the blood to give us a lot of energy quickly to fight or urn away from frightening situation. The blood supply decreases form the skin and digestive system and increase to skeletal muscles. All there conditions help the individual to respond the emergency situation.

13. **Control and co-ordination in plants**: Plants lack well organized control mechanism as in animals. However plants respond to light, touch and gravitational forces. Moreover growth and movements in plants are regulated by external and internal factors.

    Growth regulators: Plant growth regulators or phytohormones are the chemicals occurring in minute quantities and responsible for regulating metabolism, growth and development.

    The important phytohormones are Auxins (Indole-acetic acid). Gibberellins, Cytokinins, Ethylene, and Abscisic acid (ABA). All growth processes are regulated by one or photohormones acting synergistically or antagonistically.

14. The brain is covered by a three layered system of membranes; called meninges. Cerebrospinal fluid is filled between the meninges. The CSF provides a cushion to the brain against mechanical shocks. The brain is located inside the skull for maximum protection. The human brain can be divided into three regions, viz. forebrain, midbrain and hindbrain.



Human Brain

Forebrain: It is divided into three regions:

1. Olfactory Lobes - These lobes receives impulses from olfactory receptors of nose

region.

2. Cerebrum - It is the largest part of the brain and helps in speech, intellectuality, mapping, hearing, sight, taste, smell, etc.
3. Diencephalon - It has Hypothalamus which has control centre for hunger, thirst, sweating, emotions, etc.

Midbrain: It controls the reflex movements of head, neck and trunk in response to visual and auditory stimuli, changes in pupil size, etc.
Hindbrain: It consists of three parts:

1. Cerebellum - It maintains posture, equilibrium and Muscle tone.
2. Pon Varolii - It controls some aspects of respiration.
3. Medulla Oblongata - It controls heart rate, breathing movements, coughing, sneezing, vomiting, etc.

15. The pituitary gland has three lobes that secretes various hormones. It regulates various functions of the body i.e. growth, metabolism, sexual development and system of reproduction. It also controls the functioning of the other endocrine glands. Hence, it is called the master endocrine gland.
Location: Pituitary gland is about the size of a pea and is located in the centre of brain, just below the hypothalamus. It is also known as hypophysis.
Pituitary gland secretes five important hormones. The important hormones secreted by pituitary gland and their functions are listed below:

i. **Growth hormone** regulates the growth and development of bones and muscles.
ii. **Tropic hormone** regulates the secretion from other endocrine glands.
iii. **Prolactin** hormone regulates the function of mammary glands in females.
iv. **Vasopressin hormone** regulates water and electrolyte balance in the body.
v. **Oxytocin hormone** regulates the ejection of milk during lactation.