Board – ICSE	Class- VIII	TOPIC – NERVOUS SYSYTEM

I.) Multiple choice questions: Tick (✓) the correct choice.

1. The message that travels along a nerve is called

(a) Impulse (b) Stimulus (c) Response (d) None

Ans. (a)

2. Nervous system in humans consists of

(a) Brain and nerves

(b) Brain and spinal cord

(c) Brain, spinal cord and nerves

(d) None of the above

Ans. (c)

3. Memory and intelligence are controlled by

(a) Cerebrum (b) Medulla oblongata (c) Cerebellum (d) Spinal cord

Ans. (a)

4. Heartbeat and breathing are controlled by

(a) Cerebrum

(b) Spinal cord

(c) Cerebellum

(d) Medulla oblongata

5. Reflex actions are under the control of

(a) Brain (b) Medulla oblongata (c) Spinal cord (d) Cerebrum

Ans. (c)

6. Which of the following parts of the brain control involuntary actions?

(a) Medulla (b)Cerebrum (c) Cerebellum (d) Cranium

Ans. (a)

7. We think with the help of

(a) Cerebrum (b) Reflex arc (c) Medulla (d) Neuron

Ans. (a)

8. The neurons which carry impulses from the brain or spinal cord to the sense organs are called

(a) Sensory neurons

(b) Mixed neurons

(c) Motor neurons

(d) Association neurons

Ans. (c)

9. Short fibres extending from the cell body of a nerve cell are called

(a) Nerve fibres (b) Axon (c) Dendrites (d) Ganglion

Ans. (c)

10. Medulla controls

(a) Smelling

(b) Functioning of lungs and heart

(c) Circulation of blood

(d) Working of eyes

(II). Find the odd one out, giving reasons.

a) Axon, cell body, dendrite, cerebellum

Ans. Cerebellum: Cerebellum is the part of brain while axon, cell body, and dendrite are the parts of a nerve cell.

b) Cerebrum, cerebellum, neuron, brain stem

Ans. Neuron: Neuron is the structural unit of nervous system while cerebrum, cerebellum and brain stem are the parts of brain.

(III) Describe the two parts of the nervous system.

Ans. Nervous system is divided into two parts:

1. Central nervous system. It includes brain and spinal cord.

2. Peripheral nervous system. It includes nerves arising from brain (cranial nerves) and spinal cord (spinal nerves).

(IV) What are nerves? Mention the types of nerves found in humans. Ans. Nerves connect the central nervous system with the organs and tissues of the body. These nerves conduct messages from one part of the body to the other. The message that travels along a neuron is called an impulse. Neurons are of two types:

1. Sensory or afferent neurons. These nerves carry impulses from the body parts to the spinal cord or the brain. For example, olfactory nerve of the nasal chamber.

2. Motor or different neurons. These nerves carry impulses from the brain or spinal cord to the body parts.

(V) Explain the structure of brain.

Ans. Brain is the enlarged part of the central nervous system, which is encased within the cranium of the skull. Brain is composed of three membranes called meninges and bathed in a fluid called cerebrospinal fluid. Brain consists of three main centres — cerebrum, cerebellum and medulla oblongata.

1. Cerebrum. It is the largest and uppermost part of the brain. Its upper surface is made up of cells distributed into folds. It fills the whole of the upper part of skull. The cerebrum controls all important functions like thinking, memory imagination etc. because it is connected with all the sense organs.

2. Cerebellum. It is lower back part of the brain. It helps in the maintenance of balance and muscular co-ordination. It also conveys the messages received from the medulla to the cerebrum.

3. Medulla. It is also called brain stem because it connects the cerebellum with the spinal cord. It controls all the involuntary actions of body like breathing, secretion by glands, heartbeat etc.

(VI) Compare the nervous system and the endocrine system.

Nervous system	Endocrine system
(1) It is composed of neurons. (2) It includes central nervous system (CNS) and peri- pheral nervous system (PNS) (3) Message sent through nerve fibres. (4) No hormones are secreted. (5) Transmission of impulse is quick.	(1) It is composed of ductless glands called endocrine glands. (2) It includes different endo- crine glands such as pituitary, adrenal, thyroid etc. (3) Message sent through blood. (4) Hormones are secreted by glands that regulate various activities in the body. (5) Transmission takes time.

(VII) Define voluntary and reflex actions. Give examples of each.

Voluntary action	Reflex action
(1) Voluntary actions are under the control of the brain. (2) Impulses for voluntary actions originate in the brain. (3) Speed of response is slow. (4) Dancing, reading, go from one place to another are some voluntary actions	(1) Reflex actions are not under the control of the brain. (2) Impulses for reflex action originate in the spinal cord or medulla. (3) Speed of response is very fast. (4) Secretion of saliva to see some sweet dish is a reflex action.

(VIII) Why does cutting of hair cause no pain?

Ans. Nervous system is only responsible to send impulses from sensory organs to brain that cause feelings of pain. Cutting of hair causes no pain because they lack of nervous system.

(IX) Explain the structure of a nerve cell.

Ans. Nerve cell is the basic structural unit of nervous system. It is also called neuron. Each nerve cell consists of a cell body. Many short fibres are extended from the cell body. These short fibres are called dendrites. A single long fibre called axon extends from the cell body. Axon carries an electric signal called impulse from one neuron to another. This axon is covered by a sheat called myelin sheath.

(X) Distinguish between motor, sensory and association neurons with respect to their functions.

Ans. There are three kinds of neurons.

(i) Motor neurons. These neurons carry impulses from brain and spinal cord to the muscles.

(ii) Sensory neurons. These neurons carry impulses from the sensory organs to the brain and spinal cord.

(iii) Association neurons. These neurons transmit impulses from one neuron to another.