



STD 10-FIRST BELL- BIOLOGY- CLASS-06

**Chapter – 1
Sensations and Responses**

Kinds of Nervous system

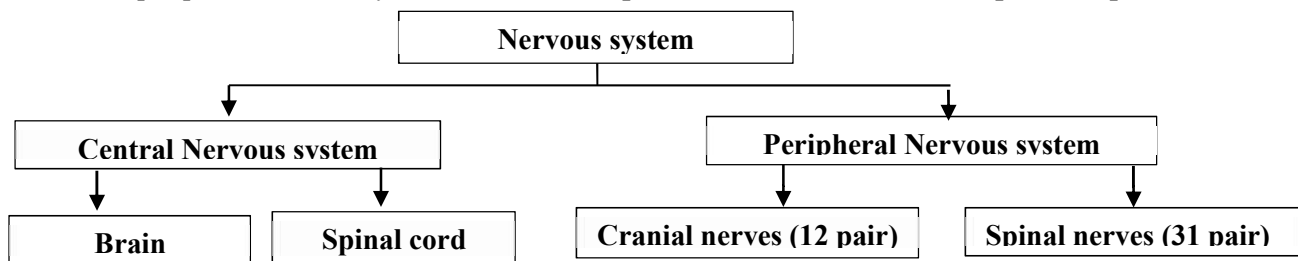
- The nervous system consists of **two parts**, namely the **central nervous system(CNS)** and the **peripheral nervous system (PNS)**

Central nervous system

- Central nervous system essentially processing area
- The central nervous system consists of brain and the spinal cord.

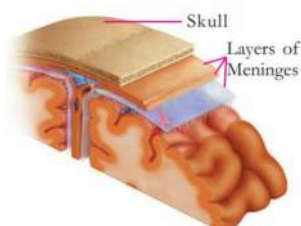
Peripheral nervous system.

- Nerves connecting the central nervous system to the organs of the body constitute the peripheral nervous system.
- The peripheral nervous system consists of **12 pairs of cranial nerves** and **31 pairs of spinal nerves**.



Brain

- Brain is the central part of nervous system. It is the most complex organ in human body.
- The brain contains the greatest number of neurons in the nervous system.



Protection of the brain

- The brain is protected inside the skull made of bone.(cranium)
- It is covered by a three - layered membrane called meninges.
- A nutritive fluid called cerebrospinal fluid (CSF) is filled within the inner membranes of meninges and the ventricles of the brain.

Cerebrospinal fluid

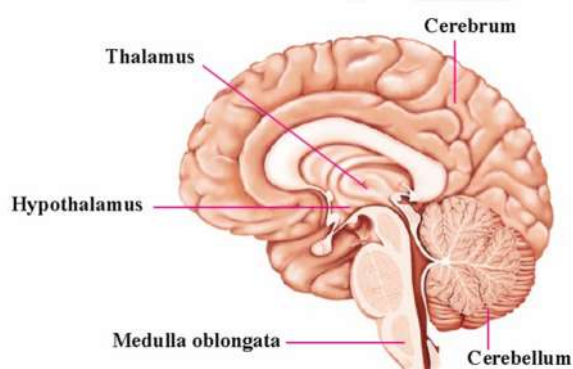
- The cerebrospinal fluid formed from blood is reabsorbed into the blood.
- It fills between the layers of meninges (brain and spinal cord), cerebral ventricles (cavities in the brain) and central canal (central part of spinal cord).

Functions of the cerebrospinal fluid (CSF)

- Provide nutrients and oxygen to the tissues of the brain
- Regulate the pressure inside the brain
- Protect the brain from injuries.

Parts of the brain

- Cerebrum, **Cerebellum**, **Medulla oblongata**, **Thalamus** and **Hypothalamus**
- Parts of the **brain** control and coordinate various life activities.



Parts	Location and peculiarities	Function
Cerebrum	<ul style="list-style-type: none">▪ The largest part of the brain.▪ Numerous fissures and folds are seen▪ Grey matter is seen in the external cortex and white matter is seen in the internal medulla	<ul style="list-style-type: none">▪ Centre of thought, intelligence, memory and imagination.▪ Evoke sensation like sight, hearing and taste etc are made possible by cerebrum.▪ Controls voluntary movements
Cerebellum	<ul style="list-style-type: none">▪ The second largest part of the brain.▪ Seen behind the cerebrum as two flaps▪ Fissures and grooves are present	<ul style="list-style-type: none">▪ Coordinates muscular activities and maintains equilibrium of the body. (Body balance)
Medulla oblongata	<ul style="list-style-type: none">▪ The rod shaped medulla oblongata is seen below the cerebrum, located near the cerebellum.	<ul style="list-style-type: none">▪ Controls involuntary actions like heartbeat, breathing etc.
Thalamus	<ul style="list-style-type: none">▪ Situated below the cerebrum.	<ul style="list-style-type: none">▪ It acts as a relay station of impulses to and from the cerebrum.▪ Analyses impulses from various parts of the body and sends the important

		ones to the cerebrum.
Hypothalamus	▪ Situated just below the thalamus.	▪ Plays a major role in the maintenance of homeostasis.

Necessity of wearing helmets while riding two wheelers



- It is because of head injury that two wheeler drivers suffer from during accidents. Such conditions occur in 70 to 80 percent of the accidents.
- Head injury results in the injury of the brain.
- Helmet protects the brain from injury.
- Two-wheelers don't have a body as other vehicles such as cars and buses have. Travellers in car and buses get some protection from the body of the vehicle.
- Accidents mainly happen to the head with irrecoverable damage.
- A person who wears helmet while driving a two- wheeler simply complies with the rules for his own safety

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