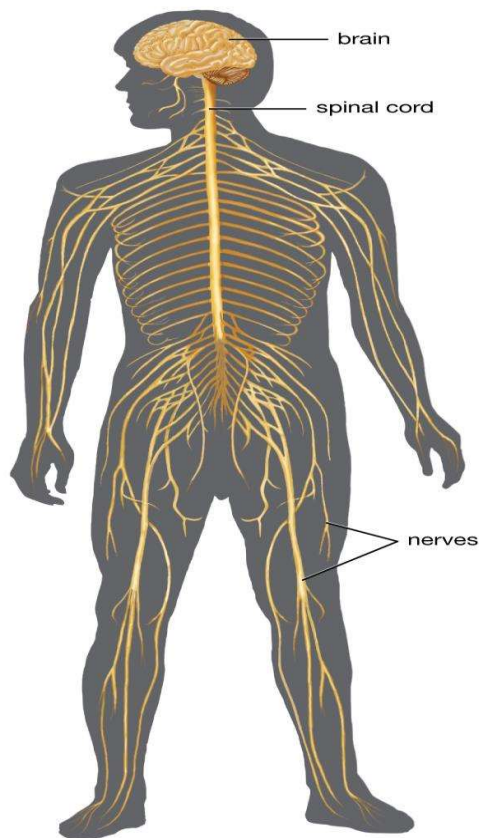


Chapter- 10

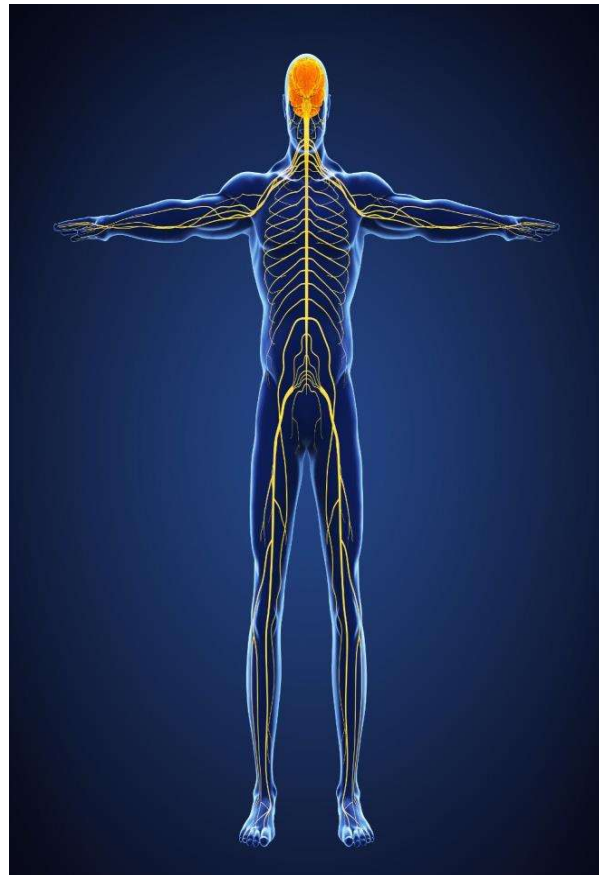
Our Nervous System

STUDY NOTES**Let's Learn**

- The brain, the spinal cord and the nerves forms the nervous system.
- The nervous system controls all the other systems of our body.

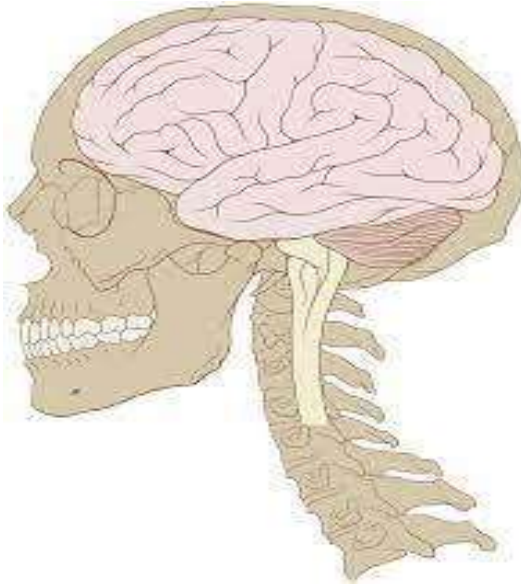


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**The Brain:**

- It is the control centre of the human body.
- It receives information from all the parts through different nerves and processes that and provides what action needs to be done.
- An adult human brain weighs about 1.4 kg and contains millions of tiny cells.
- It is protected by a hard, bony skull.
- The space between the brain and the skull and also inside the of the brain is filled with the clear fluid which serves as a cushion against jerks an injury.
- The brain needs a continuous supply of blood and oxygen.

- A person will become unconscious if its brain doesn't get an enough supply of blood.
- We must also have enough sleep to rest our brain.

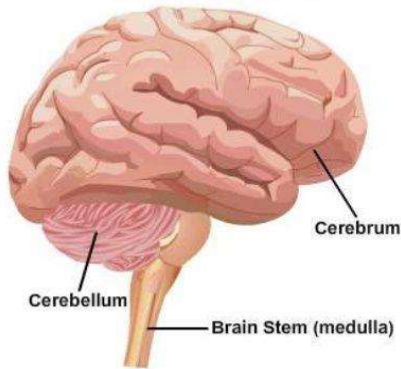


Parts of the brain:

Our brain is made up of three different parts:

- Cerebrum
- Cerebellum
- Medulla

Parts of the Brain



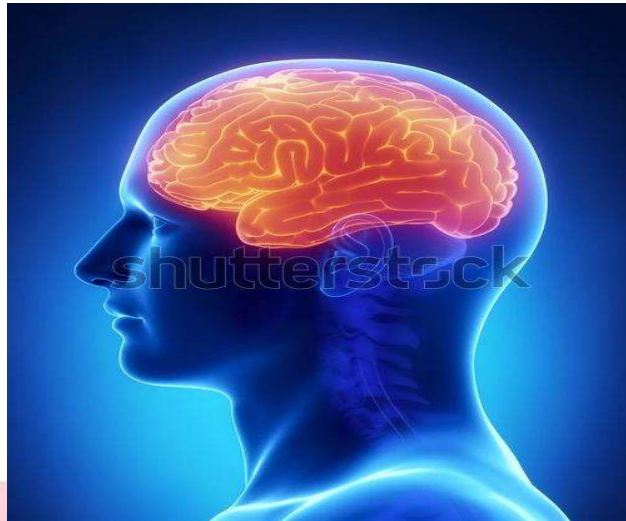
Three Main Parts of the Brain



Cerebrum:

- The largest part of the brain is the cerebrum.
- Its dome-shaped surface is covered with deep ridges and grooves.
- It controls the working of our eyes, ears, nose and tongue.

- It also controls our voice.
- It is the center of intelligence.
- We can think, learn, remember and recall because of the cerebrum.



Cerebellum:

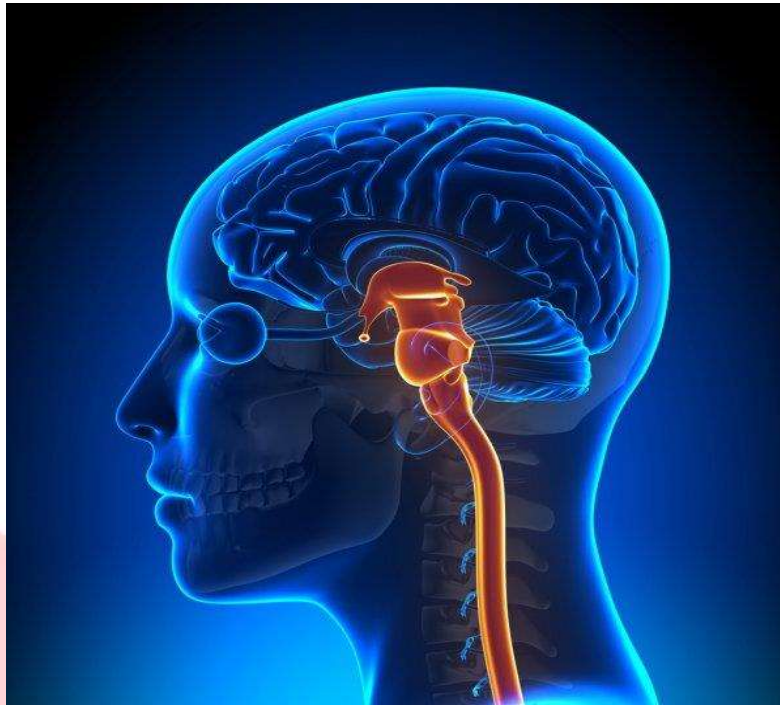
- Below the cerebrum is the cerebellum.
- It coordinates the actions of the muscles and makes them work together.
- It helps us to balance our body and keeps us in an upright position posture.
- Improper functioning of cerebellum causes jerky movements in our body.



Medulla:

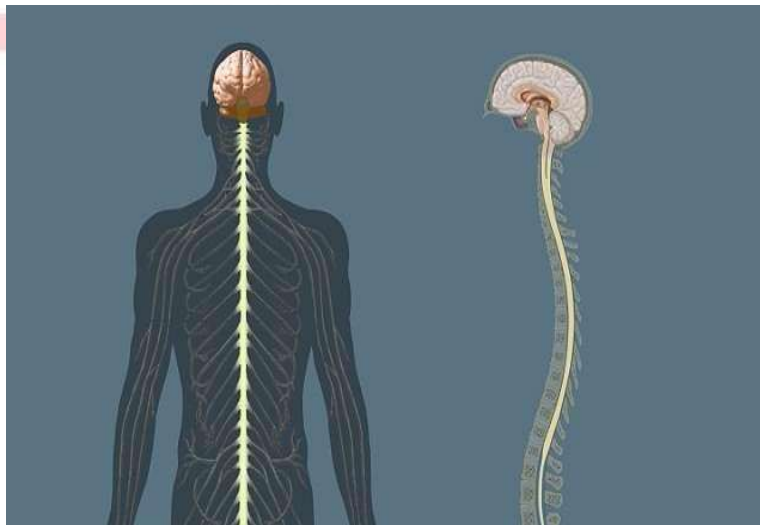
- Beneath the cerebellum lies the bulb shaped medulla.
- It connects the brain to the spinal cord.

- It controls involuntary actions like the movement of the lungs and the heart.
- It is active even when we sleep.



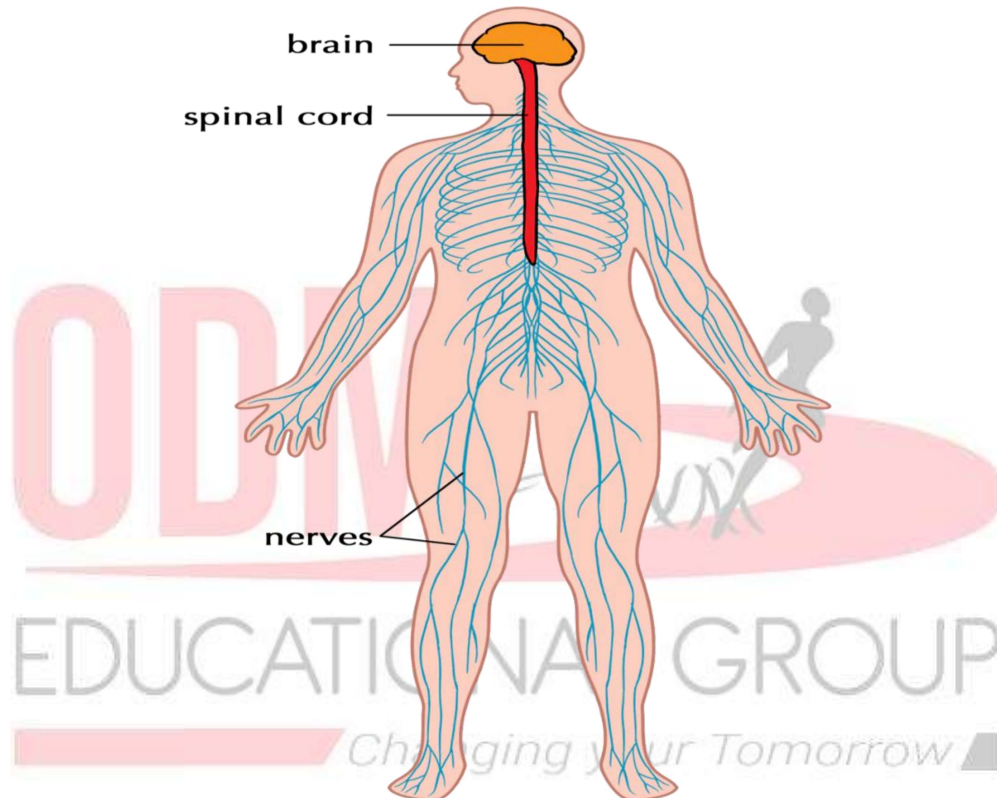
The Spinal Cord:

- It extends from the base of the brain to almost the lower end of the backbone.
- It is enclosed inside a tough bony but flexible spine.
- It connects the rest of the body to the brain through the nerves.



The Nerves:

- Nerves are long thread-like structures that carry messages between the brain and the other parts of the body.
- Nerves from the region of the head and the neck join the brain directly.
- However, nerves from the other parts of the body join each side of the spinal cord.
- The spinal cord leads to the brain.
- Nerves are made of bundles of fibres.

**Kinds of nerves:**

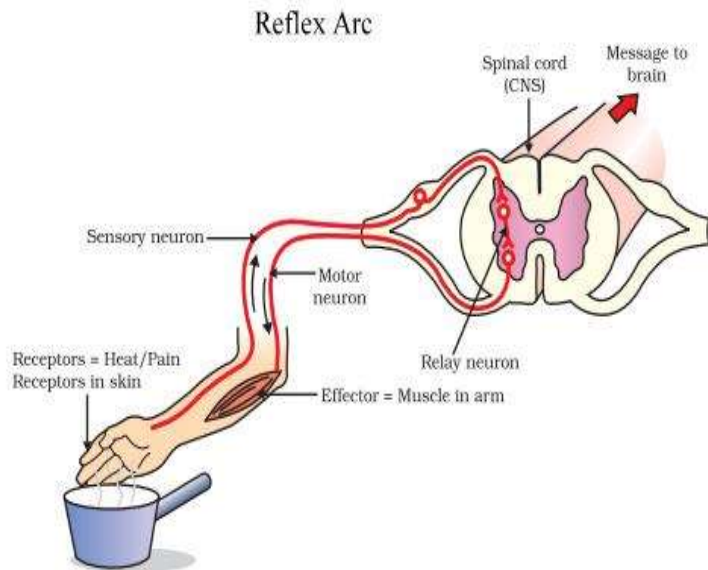
There are three kinds of nerves:

- **Sensory nerves:** The nerves which bring messages from the sense organs to the brain or the spinal cord are called sensory nerves.
- **Motor nerves:** The nerves which carry orders from the brain or the spinal cord to the muscles or glands are called motor nerves.
- **Mixed nerves:** The nerves which carry messages to the brain as well as bring orders from the brain are called mixed nerves.

Reflex action:

- Reflex action is a sudden and involuntary response to stimuli.
- Reflex actions are controlled by the spinal cord.

- For example, when we accidentally touch hot object, we remove our hand even without thinking.

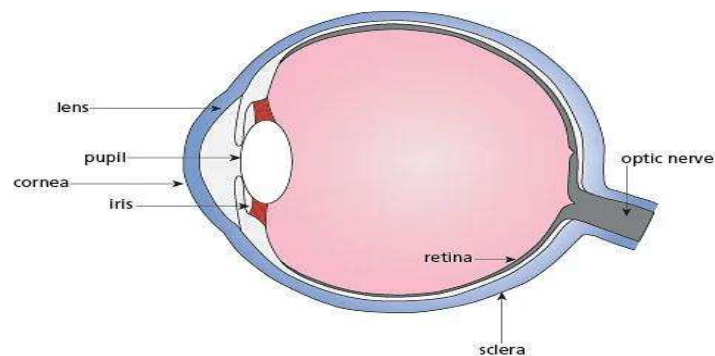


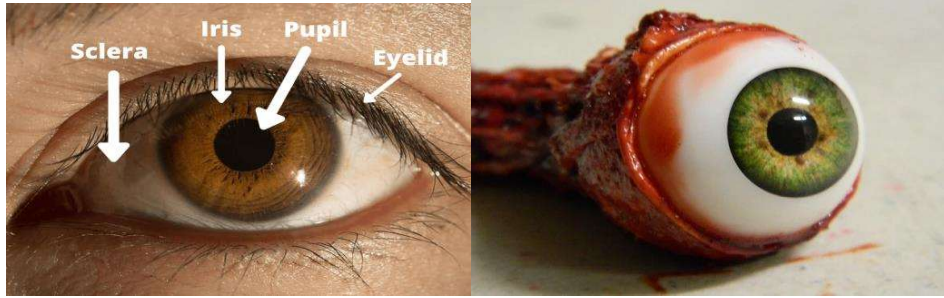
Sense Organs:

- The organs which connect us to the outside world are known as sense organs.
- The five sense organs are the eyes, the ears, the nose, the tongue and the skin.

The eyes:

- Each eyeball is safely set in a deep bony socket and is further protected by the eyelids and eyelashes.
- These help to keep dust and dirt out of our eyes.
- The different parts of the eyes are as follows:
 - Cornea: The outer bulging part of the eye is called as the cornea.
 - Iris: It is the coloured part of the eye.
 - Pupil: It looks like a black spot, is an opening through which light enters the lens.
 - Optic nerve: The sensory nerve that connects the eye to the brain is the optic nerve.

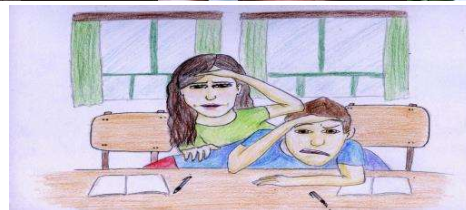




Eyeball

Care of the eyes:

- Wash your eyes regularly with clean water.
- Do not work in dim light or very bright light.
- Let the light fall from the left side of the reading material.
- Do not read in a moving vehicle. This will strain your eyes.
- Always sit at least 6 feet away from the television set.
- Do not watch TV or play games on the computer for long periods.
- Do not read while lying down.
- Sit erect and hold the book about a foot away from your eyes.
- Never rub your eyes with a dirty towel or dirty hand.
- Do not use any one else towel or handkerchief if you have an eye infection.
- Tell your teacher parents if you cannot read what is written on the blackboard.



The Ears:

- Our ears help us to hear sounds.
- They also enable us to keep our balance.
- The outer ear helps us to receive and direct sound waves to the inner ear.



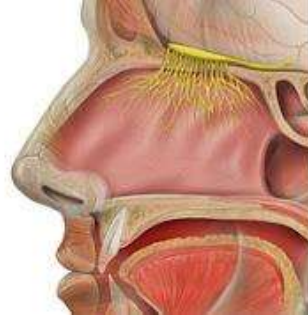
Care of the ears:

- Never clean your ears with a pointed object like a matchstick or a hairpin. You may injure the eardrum inside.
- Use a dry towel to clean your ears.
- Do not let water enter your ears.
- Go to a doctor if you have an earache.



The Nose:

- We breathe and smell with our nose.
- The sense of taste and the sense of smell are linked.
- There are many nerve endings in the upper part of her nose which are sensitive to smell.



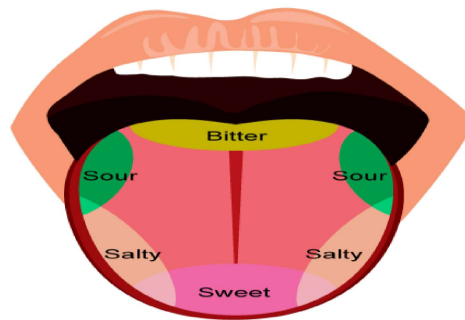
Care of the nose:

- Keep your nostril clean by blowing your nose gently.
- The hair inside the nose keeps out dust that is present in the air.
- Do not pick your nose.
- Inhale steam to clear a blocked nose.



The Tongue:

- It is the main organ of taste and it also enables us to speak.
- The surface of the tongue is covered with tiny bumps which are called taste buds.
- The nerve endings in these taste buds detect the four major tastes: sweet, salty, sour and bitter.
- Food tastes better when we can smell it.
- Food doesn't taste so good when a cold block our nose.



The Skin:

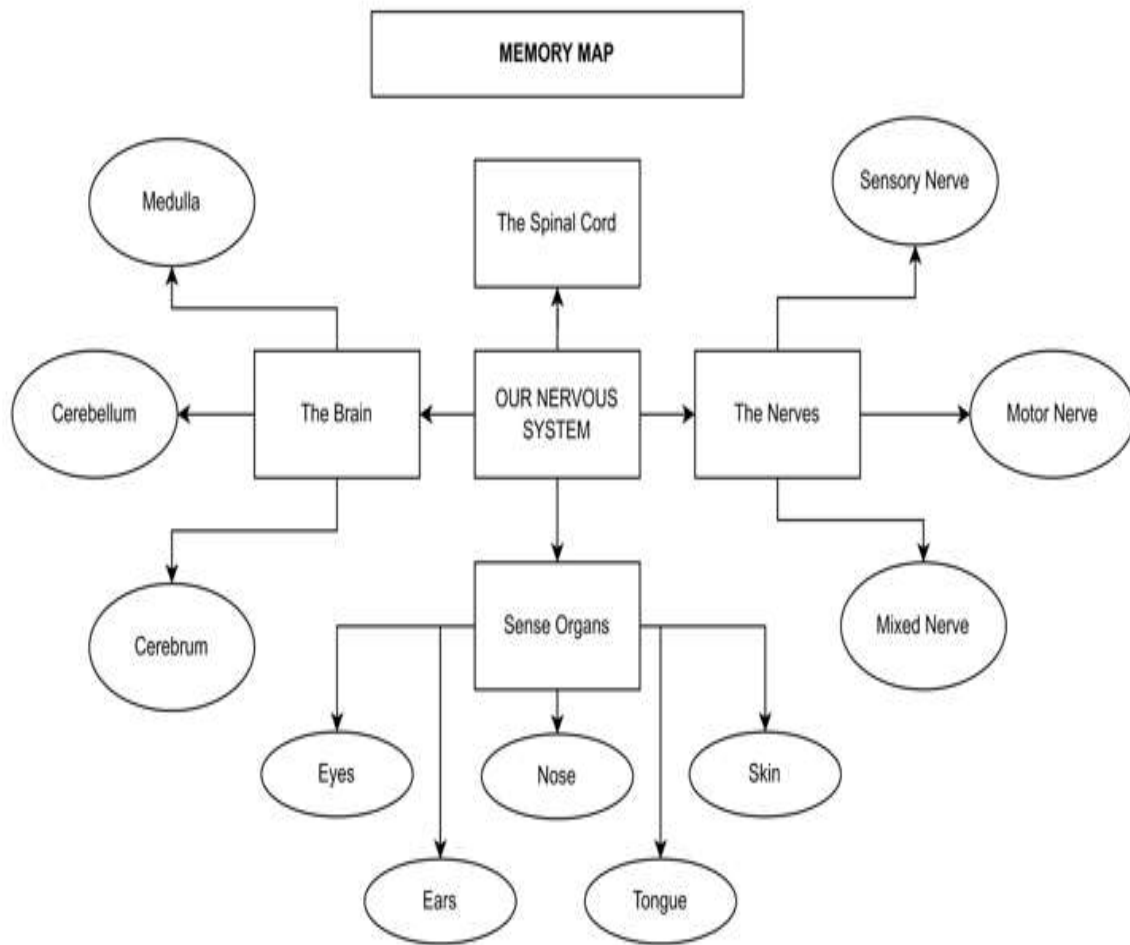
- The skin forms the outermost covering of the body
- It protects the internal organs.
- We can feel the sensation of touch, heat, pain or pressure because of our skin.
- The pores on the surface of the skin allows some body waste to come out as sweat.



Care of the skin:

- Soap and water are enough to remove dirt and sweat from the skin.
- Dry yourself thoroughly after bathing and wear clean and comfortable clothes.
- Clothes should be loose enough for the passage of fresh air when the weather is warm.
- A scratch or cut on the skin should be treated with an antiseptic lotion to prevent infection.





Changing your Tomorrow

Let's Know More

I. Choose the correct answer.

1. The bulb shaped medulla/ nerve/ cerebrum connects the brain to the spinal cord.
2. The brain needs a continuous supply of blood and oxygen/ nitrogen /carbon dioxide.
3. Blinking of the eyes is an example of a voluntary/ reflex/ involuntary action.

Let's Do

A. Tick the correct answer.

1. Our nervous system consists of the brain, the spinal cord and the
 - a. blood vessels
 - b. kidneys
 - c. lungs

- d. nerves
- 2. A person might faint if his heart does not send enough blood to his
 - a. feet.
 - b. house.
 - c. kidneys.
 - d. brain.
- 3. When we happen to touch a hot object, the sensory nerves immediately pass a message to the
 - a. brain.
 - b. hands.
 - c. spinal cord.
 - d. eyes.
- 4. To clean a blocked nose, we must inhale
 - a. perfume.
 - b. ice.
 - c. steam.
 - d. none of these.

B. Write T for true or F for false.

- 1. The system that controls the other systems is called the respiratory system.
- 2. The cerebellum coordinates the actions of the muscles and makes them work together.
- 3. The actions controlled by the spinal cord are called reflex actions.
- 4. The part of the brain that controls our senses is called the cerebrum.
- 5. The motor nerves bring messages from the sense organs to the brain or the spinal cord.
- 6. The pupil is an opening in our eye through which light enters.
- 7. The eyes enable us to keep our balance.

C. Complete the series.

- 1. Bundles of fibers : nerves :: taste buds : _____.
- 2. Memory : cerebrum :: heartbeat : _____.
- 3. Cerebellum : muscles :: cerebrum : _____.
- 4. Eyes : sight :: skin: _____.

Understand and Answer

D. Write short answers.

- 1. The brain needs a continuous supply of blood and oxygen. Why?
- 2. What are sensory nerves?

3. How is our brain protected from injuries?
4. What could happen if we clean our ears with a pointed object?
5. What is a reflex action?

E. Answer these questions.

1. What does the nervous system consist of?
2. Name the different parts of the brain. What work does each part do?
3. What are nerves and what are their functions?
4. How does food taste if we have a cold?
5. How can you keep your skin healthy?

Teacher's Note

- Make a model of nervous system.

Improve Your GK

- The body has billions of nerve cells.
- there are two types of the nervous system.

Answer Key

I.

1. Medulla
2. Oxygen
3. Involuntary action

A.

1. Nerves
2. Brain
3. Spinal cord
4. Steam

B.

1. F
2. T
3. T
4. T
5. F
6. T
7. T

C.

1. Tongue
2. Medulla
3. Voice
4. Feel

D.

1. The brain needs a continuous supply of blood and oxygen. because the cells present in the brain will die if the supply of blood which carries oxygen is stopped. Blood carries many materials which are necessary for the brain to function properly.
2. Sensory nerves are the nerves which brings messages from the sense organs to the brain or the spinal cord.
3. The brain is protected by a hard, bony skull. The space between the skull and the brain, and also the inside of the brain, is filled with a clear fluid which serves as a cushion against jerks and injuries.
4. If we clean our ears with a pointed object, it may injure the eardrum inside.
5. Reflex action is a sudden and involuntary action which is controlled by the spinal cord.

E.

1. The nervous system consists of:
 - a. the brain,
 - b. the spinal cord and
 - c. the nerves
2. The different parts of the brain are the cerebrum, the cerebellum and the medulla.
 - a. The cerebrum:
 - i. It controls the working of our eyes, ears, nose and tongue.
 - ii. It also controls our voice.
 - iii. It also helps us to think, learn, remember and recall.
 - b. The cerebellum:
 - i. We need to actions of the muscles and make them work together.
 - ii. It helps us to balance our body and keep us in an upright position.
 - c. The medulla:
 - i. It controls involuntary actions like the movement of the lungs and the heart.
 - ii. It remains active even when we sleep and control all the activities going on inside our body.
3. Nerves are long thread-like structures that carry messages between the brain and the other parts of the body. There are three types of nerves in our body. They are:
 - a. Sensory nerves: The nerves which bring messages from the sense organs to the brain or the spinal cord are called sensory nerves.
 - b. Motor nerves: The nerves which carries orders from the brain or the spinal cord to the muscles or glands are called motor nerves.
 - c. Mixed nerves: The nerves which carry messages to the brain as well as bring orders from the brain are called mixed nerves.
4. The sense of smell and taste are linked together. So, when we get cold our nose remains blocked and we are not able to smell the food properly so the food does not taste good if we have a cold.

5. We can keep our skin healthy by following these steps:
 - a. Wash your skin with soap and water to remove dirt and sweat.
 - b. After bathing we should dry ourselves thoroughly and wear clean and comfortable clothes.
 - c. The clothes we wear should be loose enough for the passage of fresh air weather is warm.
 - d. A scratch or cut on the skin should be treated with an antiseptic lotion to prevent infection.

