

7. NERVOUS SYSTEM AND SENSE ORGANS

TEACHING TASK (Page 79 - 80)

Multiple Choice Questions

1) What is the main function of the cerebrum? Answer: c) Processing sensory information and initiating voluntary movements

Explanation: The cerebrum is responsible for processing sensory input (like sight and sound) and controlling voluntary movements, such as walking or writing. It is the largest part of the brain and handles higher cognitive functions.

2) What is the significance of the cerebellum's role in the body?

Answer: b) It controls muscle movement and balance

Explanation: The cerebellum coordinates muscle movements and maintains balance and posture, ensuring smooth and precise actions.

3) How does the cerebellum affect body posture and movement?

Answer: d) It causes jerky movements and affects posture if not functioning properly

Explanation: A malfunctioning cerebellum leads to uncoordinated, jerky movements and poor posture due to its role in fine-tuning motor activities and balance.

4) Which of the following statements about the medulla is true?

Answer: b) It controls involuntary activities such as breathing and heartbeat

Explanation: The medulla oblongata regulates vital involuntary functions like breathing, heartbeat, and blood pressure, not voluntary actions or balance.

5) What is the primary function of the spinal cord? Answer: c)

Transmitting information between the brain and the body

Explanation: The spinal cord acts as a communication pathway, relaying signals between the brain and the rest of the body, and also handles reflex actions.

6) Which part of the brain is responsible for controlling the opposite side of the body? Answer: b) Cerebrum Explanation: The cerebrum's motor cortex controls voluntary movements, and each hemisphere controls the opposite side of the body (e.g., the left hemisphere controls the right side).

7) What do motor nerves primarily do? Answer: b) Carry orders from the brain or spinal cord to glands and muscles for actions

Explanation: Motor nerves transmit signals from the brain or spinal cord to muscles and glands, triggering actions like movement or secretion.

Advanced Level

8) Which of the following statements accurately describe the function of the cerebellum? (Select all that apply) Answer: a) It controls muscle movement, b) It helps maintain balance

Explanation: The cerebellum is responsible for coordinating muscle movements and maintaining balance and posture. It does not regulate breathing or process sensory information.

9) What are the functions of the spinal cord? (Select all that apply)

Answer: b) Transmitting information between the brain and the body, d) Controlling reflex actions

Explanation: The spinal cord relays signals between the brain and body and coordinates reflex actions independently of the brain. It does not initiate voluntary movements or protect the brain.

10) How are sensory nerves and motor nerves different? Answer: a) Sensory nerves carry messages from the sense organs to the brain or spinal cord, while motor nerves carry orders from the brain or spinal cord to the concerned organs for actions

Explanation: Sensory nerves transmit sensory information (e.g., touch, pain) to the brain or spinal cord, while motor nerves carry commands from the brain or spinal cord to muscles or glands.

Fill in the Blanks

11) The medulla, also known as the _____, controls involuntary activities such as breathing, heartbeat, and blood circulation. Answer: Medulla oblongata Explanation: The medulla oblongata is the part of the brainstem responsible for regulating involuntary functions like breathing, heartbeat, and blood circulation.

Matching Type

12) Match the following: Answer:

Cerebrum → C. Dome-shaped, largest part of the brain, controls all actions of the body

Cerebellum → A. Located below the cerebrum, responsible for muscle movement and balance

Medulla → B. Part of the brainstem, involved in regulating vital functions like heartbeat and breathing **Explanation:** The cerebrum controls voluntary actions and cognition, the cerebellum handles coordination and balance, and the medulla regulates vital involuntary functions.

Answer the Following Questions

13) What is the brain often referred to as due to its role in controlling all body actions? Answer: The brain is often referred to as the **control centre** of the body. **Explanation:** The brain oversees all bodily functions, from voluntary movements to involuntary processes, earning it the title of the body's control centre.

14) What is the function of the cerebrum? Answer: The cerebrum processes sensory information, initiates voluntary movements, and is responsible for higher cognitive functions like thinking, memory, and reasoning. **Explanation:** The cerebrum, the largest part of the brain, handles sensory processing, motor control, and complex cognitive tasks.

15) What are some examples of involuntary activities controlled by the medulla? Answer: Examples include breathing, heartbeat, and blood

circulation. **Explanation:** The medulla oblongata regulates essential involuntary functions necessary for survival, such as respiration, heart rate, and blood pressure.

LEARNER'S TASK (Page 80 - 82)

Multiple Choice Questions

1) Which part of the brain is located below the cerebrum and towards the back? Answer: b) Cerebellum Explanation: The cerebellum is located below the cerebrum and at the back of the brain, responsible for coordination and balance.

2) What is the function of the fluid between the brain and the skull? Answer: b) To cushion and protect the brain from injuries Explanation: Cerebrospinal fluid (CSF) acts as a shock absorber, cushioning the brain and protecting it from trauma.

3) Which part of the brain is responsible for controlling muscle movement and balance? Answer: b) Cerebellum Explanation: The cerebellum coordinates muscle movements and maintains balance, ensuring smooth and precise actions.

4) What connects the brain to the spinal cord? Answer: d) Medulla Explanation: The medulla oblongata, part of the brainstem, connects the brain to the spinal cord and relays signals between them.

5) Which of the following activities is controlled by the medulla? Answer: c) Breathing Explanation: The medulla controls involuntary functions like breathing, not voluntary movements, digestion, or memory.

6) What is the function of the spinal cord in reflex actions? Answer: d) It coordinates reflex actions without involving the brain Explanation: The spinal cord can process reflex actions (e.g., pulling a hand away from heat) independently, bypassing the brain for speed.

7) Which type of nerves carry messages from the sense organs to the brain or spinal cord? Answer: b) Sensory nerves Explanation: Sensory nerves transmit sensory information from organs like the skin or eyes to the brain or spinal cord.

Advanced Level

More than one answer type

8) What are the functions of the fluid between the brain and the skull? (Select all that apply) Answer: b) Acting as a shock absorber, c) Protecting the brain from injuries Explanation: Cerebrospinal fluid cushions the brain, acting as a shock absorber and protecting it from injury. It also nourishes brain cells but does not facilitate communication within the brain.

9) Which functions are controlled by the medulla? (Select all that apply) Answer: a) Breathing, c) Heartbeat, d) Blood circulation Explanation: The medulla oblongata regulates vital involuntary functions, including breathing, heartbeat, and blood circulation. Digestion is primarily controlled by other parts of the nervous system.

10) Which of the following accurately describe the functions of nerves? Answer: a) Sensory nerves carry messages from the sense organs to the brain or spinal cord, b) Motor nerves carry orders from the brain or spinal cord to the concerned organs for actions, d) Mixed nerves carry messages to the brain as well as bring orders from the brain to the concerned organs Explanation: Sensory nerves transmit sensory data, motor nerves carry commands for action, and mixed nerves perform both functions.

Fill in the Blanks

11) The spinal cord extends almost till the lower end of our backbone, and it is surrounded and protected by the _____.

Answer: Vertebral column **Explanation:** The vertebral column (spine) encases and protects the spinal cord from injury.

12) The fluid between the brain and the skull acts as a shock absorber and _____ the brain from injuries. Answer: Protects

Explanation: Cerebrospinal fluid cushions and protects the brain from trauma.

Matching Type

13) Match the following: Answer:

Structure connects the brain to the spinal cord → C. Medulla

Another term for the medulla → B. Brain stem

Protects the spinal cord and is made up of many nerves → A. Vertebral column

Explanation: The medulla connects the brain to the spinal cord, is part of the brainstem, and the vertebral column protects the spinal cord (though it is not made of nerves).

Answer the Following Questions

14) What happens to body posture and movement if the cerebellum is not functioning properly? Answer: If the cerebellum is not

functioning properly, body posture becomes unsteady, and movements become jerky and uncoordinated. **Explanation:** The cerebellum ensures smooth, coordinated movements and stable posture, so its dysfunction leads to issues like ataxia.

15) How many main parts does the brain have, and what are they?

Answer: The brain has three main parts: the cerebrum, cerebellum, and medulla (brainstem). **Explanation:** These are the primary regions of the brain, each with distinct functions (cognition, coordination, and vital functions, respectively).

16) What is the function of the vertebral column in relation to the spinal cord? Answer: The vertebral column surrounds and protects the spinal cord from injury. **Explanation:** The bony structure of the vertebral column shields the delicate spinal cord, allowing it to function safely.

TEACHING TASK (Page 84 - 86)

Multiple Choice Questions

1) What is the purpose of the optic nerve? Answer: c) Connects the eye to the brain Explanation: The optic nerve carries visual information from the retina in the eye to the brain for processing.

2) What is recommended for maintaining eye health? Answer: d) Getting regular eye check-ups every six months Explanation: Regular eye check-ups help detect and prevent vision problems, unlike reading in dim light or using dirty towels, which can harm the eyes.

3) Which part of the ear collects sound waves and acts like a funnel? Answer: c) Pinna Explanation: The pinna (outer ear) collects sound waves and directs them into the ear canal, acting like a funnel.

4) What is the function of the middle ear? Answer: d) To transmit sound waves from the outer ear to the inner ear Explanation: The middle ear (including the eardrum and ossicles) amplifies and transmits sound waves from the outer ear to the inner ear.

5) How does the brain identify smells? Answer: c) By sending messages through the olfactory nerve Explanation: The olfactory nerve carries sensory information about smells from the nasal cavity to the brain.

6) What covers the surface of the tongue and helps identify different tastes? Answer: a) Taste buds Explanation: Taste buds on the tongue detect different tastes, such as sweet, salty, sour, and bitter.

Advanced Level (More than one answer type)

7) Which parts of the eye are mentioned in the passage? (Select all that apply) Answer: a) Eyelids, b) Pupil, c) Cornea Explanation: The spleen is not part of the eye, but eyelids, pupil, and cornea are key components involved in vision and protection.

8) Which actions contribute to caring for the skin? Answer: a) Keeping the skin clean with soap and water, b) Wearing clean clothes, c) Drinking plenty of water and eating nutritious food Explanation: These actions promote skin health by maintaining hygiene and hydration. Applying makeup regularly is not necessarily beneficial.

Fill in the Blanks

9) The black spot in the centre of the iris is called the _____. Answer: Pupil Explanation: The pupil is the black opening in the centre of the iris that allows light to enter the eye.

10) The surface of the tongue is covered with ____ which help us to identify different tastes such as sweet, salty, sour, and bitter. Answer: Taste buds Explanation: Taste buds are sensory structures on the tongue responsible for taste perception.

Matching Type

11) Match the following: Answer:

Iris → B. Coloured circle in the eye

Cornea → C. Transparent circular part in the front of the eye

Pupil → D. Black spot in the centre of the iris

Retina → A. Lining at the back of the eye

Explanation: The iris controls pupil size, the cornea allows light entry, the pupil is the light-entering opening, and the retina detects light for image formation.

Answer the Following Questions

12) What are the main components of the eye and their functions?

Answer: The main components of the eye include:

Cornea: Transparent front layer that allows light to enter and helps focus it.

Pupil: Opening that regulates the amount of light entering the eye.

Iris: Coloured part that controls the pupil's size.

Retina: Light-sensitive layer at the back that converts light into electrical signals.

Optic nerve: Transmits visual signals from the retina to the brain.

Explanation: These components work together to capture and process visual information.

13) What is the role of the olfactory nerve in the process of

smelling? Answer: The olfactory nerve carries sensory information about smells from the nasal cavity to the brain, enabling the identification of Odors. **Explanation:** It transmits electrical impulses formed by olfactory receptors in the nose to the brain's olfactory centres.

LEARNER'S TASK (Page 86 - 87)

Multiple Choice Questions

1) What is the function of the iris in the eye? Answer: c) Controls the size of the pupil **Explanation:** The iris adjusts the pupil's size to regulate the amount of light entering the eye.

2) Which part of the eye allows light to enter? Answer: c) Pupil

Explanation: The pupil is the opening through which light enters the eye, controlled by the iris.

3) What are the three parts of the ear? Answer: a) Outer ear, middle ear, and inner ear

Explanation: The ear is divided into these three regions, each with specific roles in hearing and balance.

4) What is the primary function of the nose? Answer: b) Smelling and Breathing

Explanation: The nose is responsible for olfaction (smelling) and respiration (breathing).

5) What helps prevent dust from entering inside the nose? Answer: c) Tiny hairs in the nostrils

Explanation: Nasal hairs filter dust and particles, preventing them from entering the respiratory system.

6) What is the primary function of the nose? Answer: b) Smelling and Breathing

Explanation: This is a repeated question; the nose's primary functions are smelling and breathing.

7) How should one treat a skin injury to prevent infection? Answer: b) Use antiseptic, c) Clean with soap and water

Explanation: Cleaning with soap and water and applying antiseptic prevent infection in skin injuries. Wearing clean clothes is preventive but not a direct treatment.

Advanced Level (More than one answer type)

8) Which of the following are recommended practices for eye care according to the passage? (Select all that apply) Answer: a) Wash your eyes a number of times in a day with clean water, b) Avoid reading in moving vehicles, c) Maintain a straight posture while reading, d) Never read in dim light

Explanation: These practices promote eye health by reducing strain and maintaining hygiene.

9) What are recommended practices for caring for the nose? Answer:

a) Breathing through the nose, b) Keeping nostrils clean, c) Inhaling steam to clear a blocked nose

Explanation: These practices maintain nasal health and function. Avoiding spicy foods is not typically a nose care recommendation.

Fill in the Blanks

10) Light enters the eyes through the _____. Answer: Pupil

Explanation: The pupil is the opening that allows light to enter the eye.

11) The nose helps us to ____ and _____. Answer: Smell and Breathe

Explanation: The nose's primary functions are olfaction (smelling) and respiration (breathing).

Matching Type

12) Match the following: Answer:

Eyes → C. Sight

Ears → A. Hearing

Nose → D. Smell

Tongue → B. Taste

Explanation: Each sensory organ is matched with its primary function.

Answer the Following Questions

13) How does the passage suggest caring for the eyes?

Answer: The passage suggests caring for the eyes by washing them with clean water multiple times a day, avoiding reading in moving vehicles, maintaining a straight posture while reading, avoiding reading in dim light, and getting regular eye check-ups every six months.

Explanation: These practices reduce eye strain, maintain hygiene, and ensure early detection of issues.

14) How can one care for the skin to prevent infection after sustaining an injury?

Answer: To prevent infection after a skin injury, clean the wound with soap and water and apply an antiseptic. **Explanation:** Cleaning removes dirt and bacteria, and antiseptics kill or inhibit microbes, preventing infection.