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Study of the Nervous System

Experiment 1 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify the major structures on an approved anatomical model and relate each structure to its physiological function.

Principle

The central nervous system consists of brain and spinal cord. Peripheral nerves carry sensory input and motor output; autonomic pathways regulate visceral activity. Integration, conduction and responses depend on specialised neural structures.

Requirements

- Labelled and unlabelled teaching models or preserved institutional specimens; atlas supplied by the instructor.
- Pointer, notebook and a blank labelled-sketch sheet.

Procedure

1. Orient the model

Identify anterior/posterior and right/left using anatomical orientation. Record the organ system and the plane of the model.

2. Identify structures

Locate the structures in the table without reading the label first; then check your identification with the instructor.

3. Trace the pathway

Trace a simple sensory signal from a peripheral receptor through a sensory nerve to the spinal cord or brain, then trace the appropriate motor pathway to an effector.

4. Relate structure and function

Explain the function of each identified part and one consequence of disturbed function. Separate an observed structural feature from an inferred physiological effect.

5. Draw and label

Prepare a simple labelled sketch showing the pathway or relationships. Label arrows consistently and record one structure you initially confused.

Human Anatomy, Physiology and Pathophysiology II**Observations and Record**

Structure	Identification cue	Function
Cerebrum	Paired hemispheres and cerebral cortex	Conscious sensation, voluntary movement and higher functions
Cerebellum	Posterior structure behind brainstem	Coordination, balance and motor learning
Brainstem	Midbrain, pons and medulla	Conduction and important automatic functions
Spinal cord	Continuation within vertebral canal	Conduction and spinal integration
Dorsal and ventral roots	Posterior sensory and anterior motor roots	Routes into and out of the cord
Peripheral / autonomic nerves	Nerves outside CNS	Somatic or visceral communication

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Complete a recall check: cover the model labels and identify five structures. Record the number correctly located and explain the correction for any error; this is a classroom learning record.

Result

Record the identified structures, the traced pathway and the completed labelled sketch.

Precautions

- Use models and institution-approved teaching specimens; do not undertake dissection independently.
- Handle specimens as directed by the laboratory and avoid confusing the viewer's right with anatomical right.

Viva Questions and Answers**1. Which root carries sensory fibres?**

The dorsal root.

2. Is the cerebellum the primary initiator of voluntary movement?

No. It helps coordinate and adjust movement.

3. What distinguishes CNS from PNS?

CNS is brain and spinal cord; PNS includes nerves and ganglia outside them.

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