Question Bank for Unit I: Nervous System Human Anatomy and Physiology-II (Theory, BP201T)

Pharmacy Council of India

Semester II, B. Pharm Program

Introduction

This question bank is designed for Unit I: Nervous System of the course Human Anatomy and Physiology-II (Theory, BP201T) as per the PCI Regulation for B. Pharm Semester II. It aligns with the course outcome (CO1): Explain the organization, structure, and functions of the nervous system, including neuron physiology, central nervous system components, and reflex activity. The questions are categorized into three types: Elaborate (10 marks each), Notes (5 marks each), and Short Answers (2 marks each), reflecting the examination structure of The Tamil Nadu Dr. M.G.R. Medical University (2018–2024). The questions cover all topics in Unit I, including organization of the nervous system, neuron, neuroglia, nerve fibers, electrophysiology, action potential, nerve impulse, receptors, synapse, neurotransmitters, central nervous system (meninges, ventricles, cerebrospinal fluid, brain, spinal cord), and reflex activity. They are designed to support the AAA (Align, Assess, Achieve) guidelines, ensuring alignment with learning objectives, varied assessment methods, and achievement of pharmaceutical knowledge relevant to nervous system functions.

Question Bank

I. Elaborate on (10 Marks Each)

1. Write about the structure and functions of brain. (Sep 2018)
2. Draw the neat diagram of brain and explain the anatomy and physiology of cerebrum and cerebellum. (Oct 2022)
3. Name the four surface lobes of the cerebral hemisphere and describe the functions of the cortex in each lobe. (Sep 2019)
4. Give a detailed anatomy of human brain. (May 2024)
5. Explain the organization of the nervous system with a neat diagram and discuss the roles of central and peripheral nervous systems.

6. Describe the structure of a neuron with a labeled diagram and explain the physiology of nerve impulse transmission.
7. Discuss the structure and functions of the spinal cord, including the role of afferent and efferent nerve tracts.

II. Write Notes on (5 Marks Each)

1. Reflex action. (Sep 2018)
2. Write about neurotransmitter with examples. (Sep 2018)
3. Describe the associated structures and functions of cerebellum. (Mar 2019)
4. Write a note on neurotransmitter receptors with examples. (Sep 2019)
5. Organization of nervous system. (Mar 2020)
6. Draw a neat diagram of a neuron and discuss briefly on action potential. (Mar 2020)
7. Describe organization of the nervous system. (Mar 2021)
8. Discuss cranial nerves and its function. (Jan 2022)
9. Describe ventricles of the brain. (Jan 2022)
10. Diagrammatically explain the events involved in an action potential. (Jan 2022)
11. Write a note on meninges of brain. (May 2022)
12. Write detailed note on reflex activity. (May 2024)
13. Discuss process of nerve action potential generation. Explain 'Gating Mechanism' of sodium channels. (Oct 2024)
14. Write a note on blood brain barrier. (Oct 2024)
15. Explain the structure and functions of neuroglia with examples.
16. Discuss the classification and properties of nerve fibers.
17. Describe the structure and role of synapses in neural communication.
18. Explain the composition and functions of cerebrospinal fluid.

III. Short Answers on (2 Marks Each)

1. Neuroglia. (Sep 2018)
2. Functions of hypothalamus. (Sep 2018)
3. Reflex arc. (Mar 2019)
4. Resting membrane potential. (Mar 2019)
5. Neurotransmitters. (Mar 2019)
6. Functions of cerebellum. (Sep 2019)
7. Function of neuroglia. (Mar 2021)
8. Draw a neat diagram of neuron and label it. (Mar 2021)
9. List out the properties of nerve fiber. (Mar 2021)
10. What is the importance of meninges. (Mar 2021)
11. Functions of cerebrum and cerebellum. (Mar 2021)
12. Define synapse; add a note on its types. (Aug 2023)
13. List the parts and functions of brain stem. (Aug 2023)
14. Define and classify the types of neurotransmitters with example. (Dec 2023)
15. Mention the composition and functions of CSF. (Dec 2023)
16. Functions of medulla oblongata. (May 2024)
17. Neuroglia. (May 2024)
18. Meningitis. (Oct 2024)
19. Define ganglia. (May 2022)
20. Note on action potential. (Oct 2022)
21. Define the role of meninges in protecting the central nervous system.
22. List two functions of the spinal cord.
23. Define nerve impulse and its propagation.
24. Name two types of neuroglia and their roles.
25. What is the role of ventricles in the brain?

Notes

- **Source**: Questions 1–3 (Elaborate), 4–14 (Notes), and 13–20 (Short Answers) are directly extracted or adapted from the provided examination papers (2018–2024). Additional questions (4–7 in Elaborate, 15–18 in Notes, 21–25 in Short Answers) were created to ensure comprehensive coverage of Unit I topics, such as synapses, nerve impulse, and meninges, which were underrepresented in the papers.
- **Alignment**: Questions cover all Unit I topics and align with CO1, emphasizing pharmaceutical knowledge (PO1) and critical thinking (PO2).
- **Assessment**: Questions span knowledge (e.g., define neuroglia), comprehension (e.g., explain action potential), and application (e.g., discuss reflex activity), supporting varied assessment methods.
- **Achieve**: Questions link to pharmacy applications (e.g., neurotransmitters and drug targets, blood-brain barrier and drug delivery).
- **Exam Structure**: Follows the BP201T exam pattern: Elaborate (2 out of 3, 20 marks), Notes (7 out of 9, 35 marks), Short Answers (all 10, 20 marks).
- **Adaptability**: Questions can be used for in-class quizzes, assignments, or exams, and are adaptable for online platforms (e.g., MCQ platforms like Kahoot).