Anatomical Terminology:

- Define the following anatomical terms used to describe orientation and position in the nervous system: dorsal, ventral, rostral/anterior, caudal/posterior, superior, inferior, lateral, medial, ipsilateral, and contralateral.
- Describe the coronal, sagittal, and horizontal planes of the brain.

Organization of the Nervous System:

- Describe the major divisions of the nervous system: the Central Nervous System (CNS) and the Peripheral Nervous System (PNS). What are the key components of each?

Support Structures of the CNS:

- Describe the three layers of the meninges and their functions in protecting the CNS.
- What are the ventricles of the brain, and what is their role in producing and circulating cerebrospinal fluid (CSF)? What are some of the functions of CSF? What happens if the flow of CSF is blocked?
- Explain the importance of the blood-brain barrier (BBB). What structural features create this barrier, and what types of substances can and cannot easily cross it? Why is the BBB important for brain function and protection?

Major Brain Regions and Their Functions:

- Describe the key structures within the hindbrain (medulla, pons, cerebellum) and their primary functions. What is the brainstem, and which hindbrain structures are part of it?
- What are the main components of the midbrain (tectum and tegmentum) and their associated functions?
- What are the key structures within the diencephalon and their major roles? What are the "4 Fs"?
- What are the main components of the telencephalon? Briefly describe the primary functions associated with each of these.

The Cerebral Cortex:

- What are the four lobes of the cerebral cortex and what are the main functions associated with each lobe?

Sensory and Motor Pathways:

- How does sensory information travel from the body to the brain via the spinal cord? Explain the roles of the dorsal roots and ventral roots. What is the Bell-Magendie Law?

Communication within the Nervous System:

- What is the corpus callosum, and what is its main function? What type of brain matter is it primarily composed of?
- Explain the concept of "Re-Entrant" systems as mentioned in relation to the limbic system and basal ganglia. What does this imply about information processing in the brain?

The Autonomic Nervous System:

- Compare and contrast the functions of the sympathetic and parasympathetic nervous systems. Give specific examples of their opposing effects on different organs and bodily functions.
- When might the sympathetic nervous system be activated, and what are the physiological responses associated with this activation? What is parasympathetic rebound?