

MODULE IV: REVIEW OF NEUROANATOMY

In this section you should be able to:

1. Outline the anatomical and functional divisions of the nervous system
2. State the components of the nervous tissue
3. Describe both the structural and functional classification of neurons and give distribution of each
4. Explain the fiber types of the cerebral white matter and give two examples for each
5. Name the central and peripheral neuroglial cells and state the functions of each
6. Illustrate the lobes of the cerebral cortex and indicate major gyri in each lobe
7. On a labelled diagram, locate the major functional areas of each lobe of the cerebral cortex
8. Describe the formation and significance of the arterial circle of Willis
9. State the origin, course, branches and functional areas of distribution of the three cerebral arteries
10. State the components, functions, major connections and main disorders of the basal ganglia
11. State the components, functions, major connections and main disorders of the limbic system
12. State the components and functions of the hippocampal formation
13. Illustrate the Papez circuit using a labelled diagram
14. Name the major thalamic nuclei and state the connections/functions of each
15. Name the major hypothalamic nuclei and state the functions of each
16. Describe the relations, external features, internal structure and blood supply to the midbrain
17. State the boundaries, contents and clinical relevance of the interpeduncular fossa
18. Describe the external features, internal structure and blood supply to the pons
19. Describe the external features, internal structure and blood supply to the medulla oblongata
20. Classify the cranial nerve nuclei according to their location and functional components, and state the distribution of each
21. Describe the various alternating hemiplegic syndromes of the brainstem
22. Describe the origin, course and distribution of each of the cranial nerves

23. Name the morphology and functional division of the cerebellum and state the functions of each division
24. Name the cerebellar nuclei and indicate the connections of each
25. Name the fiber tracts traversed by each of the cerebellar peduncles
26. Describe the external features and support mechanisms of the spinal cord
27. Using a cross-sectional diagram, illustrate the internal structure of the spinal cord, indicating where the major fibers are located
28. Describe the origin, course, termination, function and clinical relevance of the pyramidal tract
29. Name the receptors of general sensations and state the modality for each
30. Describe the major ascending pathways namely spinothalamic, dorsal column, spinocerebellar and trigeminal pathways
31. Describe the receptors of special sensations describe their related pathways
32. Outline the formation, flow, absorption and disorders of the cerebrospinal fluid
33. Describe the process of neurulation and state its related anomalies
34. Name the brain vesicles and state the derivatives of each
35. Describe the origin, development and common congenital malformations of the spinal cord