

STUDY GUIDE FOR chapter 2

This is not an exhaustive review of information you have learned. It is a set of questions that sample from the various topics we have covered. If you can reasonably answer all these questions, you appear to have a good grasp of the information, and you should do well. If you cannot, look up any information you are missing, and come to the review session.

CHAPTER 2. Functional Neuroanatomy: The Nervous System and Behaviour

Cells

1. What are the two main cell types of the nervous system?
2. Describe the four structural divisions of a neuron and the functions of each functional zone.
3. Describe the neuroanatomical methods that are used to visualize structures in the brain.
4. Describe the neuroanatomical methods that are used to trace pathways in the brain.
5. What are the basic structures of the neuron and what functions do these structures perform?
6. Describe four major classes of neurons.
7. What are the general functions of glia?
8. What are the major classes and types of glia; what are their functions?
9. Where is the major site of protein synthesis in the neuron?
10. Where are mitochondria located?
11. What is the cytoskeleton and what is its function in the neuron?
12. What is axonal transport? Distinguish the three types of axonal transport.
13. Describe the blood-brain barrier.

Neuroanatomy

14. Describe the neuraxis and how anatomical directions relate to it.
15. Compare ipsilateral and contralateral.
16. Define the three ways to section the brain and one to section the spinal cord.
17. Define afferent and efferent nerves.
18. What are the meninges and describe their subdivisions. Are they only present in the brain?
19. Describe the importance of the CSF and where it is contained in the central nervous system.
20. Explain the production, circulation, and reabsorption of CSF.
21. What are the branches of the nervous system, and what do they do?
22. Define the forebrain, midbrain, and hindbrain, and describe major functions of each.
23. What are the lobes of the forebrain.
24. Define gyrus; sulcus; fissure.
25. What is the corpus callosum.
26. What is the difference between gray and white matter
27. Describe the major functional systems of the forebrain.
28. Describe the somatosensory, motor, limbic and association cortices.
29. Describe cortical columns.
30. Describe the divisions and functions of the midbrain.
31. Describe the divisions and functions of the hindbrain.
32. What are the major functions of the cerebellum?
33. Describe the major imaging techniques that are used for studies in the living human brain.
34. What are the subdivisions of the PNS and what do they do?
35. Describe the anatomy and functions of the branches of the autonomic nervous system.
36. Describe the cranial nerves and their functions.