Study Guide Quiz 6

1. Quiz # 5 covers lab exercises 13 and 14. You need to study chapter 8 of your text book to understand many concepts.

2. Types of neuroglia and their main functions– Fig 8.4. Astrocytes – packing, insulation, anchorage to neurons, microglial cells - phagocytosis, ependymal cells – move cerebrospinal fluid and oligodendrocytes – form myelin sheath around nerve fibers.


4. Myelinated nerve fibers – covered by myelin and neurilemma – mainly PNS but also tracts inside CNS. Fig 13.2

5. Unmyelinated nerve fiber – covered only my neurilemma – mainly found in CNS and ANS.

6. Unipolar neurons – dorsal root sensory neurons. Fig 13.3

7. Bipolar neurons – 1 dendrite 1 axon – found in retina of eye.

8. Multipolar neurons – many dendrites and 1 axon – majority of neurons.

9. Fig 13.5 depicts the resting potential and generation of an action potential. Remember terms like polarization, depolarization, repolarization and hyperpolarisation.

10. Sensory neuron – Interneuron (Association) neuron – Motor neurons on basis of function – Fig 13.4

11. Structure of Nerve – Fig 13.6 – Epineurium – around whole nerve; Perineurium – around a fascicle and Endoneurium – around individual nerve fibers.

12. Sensory nerves have only afferent nerve fibers; motor nerves have only efferent nerve fibers and mixed nerves have both afferent and efferent nerve fibers in them. Remember the cranial nerve groups discussed in class.

13. Human Brain – Fig 14.1, 14.2 and 14.4 – Main parts of brain and their functions as discussed in lecture / lab. Study guide helps but need to refer to figures in lab manual / book. Question # 14-1, 14-6

14. Functional Nervous System – normally specific centers control individual functions but many structures participate simultaneously in many functions. It has 2 parts – Limbic system and Reticular formation.

15. Limbic system is formed of various structures, including Amygdala and Hypothalamus, lying medial to diencephalon and midbrain. Limbic system is responsible for emotional reaction to conscious understandings. It helps to store long term memories. Fig 8.23

16. Reticular formation is a loose network of gray matter in otherwise white matter of brain stem. It controls the alertness of cerebral cortex (arousal) through Reticular Activation System. RAS and cerebral cortex filters and disregard 99% of sensory input.

17. EEG – Electroencephalography is the recording of electrical activity of brain. Many electrodes are attached to head and face and waves of activity recorded.

18. Alpha waves indicate relaxed awake brain. Beta waves indicate active awake brain. Theta waves are mostly present in children but not in awake adults. Deep sleep is recorded as delta waves.
Spontaneous brain waves are always present even during unconsciousness and coma. A flat EEG indicates brain death. Fig 8.21 and accompanied text in text book.

19. **Brain meninges** Fig 8-13 – question # 14-8

20. Cerebrospinal fluid – function – relationship to choroids in roof of 3rd and 4th ventricle. Fig 8.18 – question # 14-9

21. Spinal Cord – fig 15.2 – pay special attention to origin of a spinal nerve – dorsal root with a ganglion and has only afferent fibers; ventral root has only efferent nerve fibers. Note the shape of gray and white matter present in spinal nerve cord and central canal is lined with ependymal epithelium.