A&P Exam 4 Study Guide

GUARANTEED QUESTIONS:

1. Mix and match about thirty.

2. Draw a neuron, label the dendritic end, axonal tree, and axon; and show with an arrow which direction nerve signals travel. (119)

3. How could you identify the following types of neuroglia cells of central nervous system and what are their functions; astrocytes, oligodendrocytes, microglial cells, and ependymal cells? (120-122)

_____

_____

_____

_____

_____

_____

_____

_____

4. How could you identify the following types of neuroglia cells of the peripheral nervous system and what are their functions: schwann cells and satellite cells? (121&122)

_____

_____

_____

_____

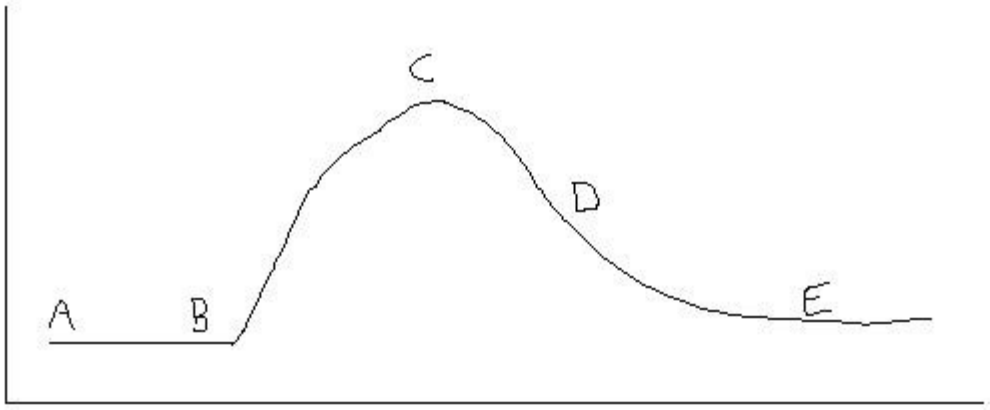
5. Explain the function of schwann cells, which surround neurons? What are the nodes of Ranvier and what is their significance? How does greater neuron diameter affect the speed of nerve transmissions? (124-125)

1. Function of Schwann cells:

2. Node of Ranvier:

3. How does the greater diameter affect the speed of nerve transmission?

6. Explain what is happening at different points on an action potential diagram for nerves. How and where are ions moving? How does the action potential move down the cell? (122-124)



7. If all action potentials are the same, how is different information carried by nerve signals?

8. What is an electric synapse and how does it work? (126-127)

9. Be able to explain in detail how acetylcholine and monoamine neurotransmitters carry the nerve signal across the synapse. (127-130)

Acetylcholine:

<u>Monoamine:</u>

10. Contrast excitatory and inhibitory post synaptic potentials. (131)

11. What are graded potentials? (131-132)

12. What is presynaptic facilitation and what is presynaptic inhibition? (132)

13. Be able to diagram and explain the following types of neural circuits and how they function: convergent, divergent, reverberating, and parallel after discharge. (132-133)
Convergent:

Divergent:

_____

_____

Reverberating:

_____

_____

Parallel after discharge:

_____

_____

14. Explain temporal summation and spacial summation. (133)

15. What effect does alkalosis or acidosis have on the nervous system? (133)

16. Define the four basic types of neurotransmitters and their basic mode of action (i.e., do they work like acetylcholine or monoamine neurotransmitters). (133-135)

17. In general what affect do drugs have on the nervous system? (136)

18. Define and contrast the parts of the central and peripheral nervous system. (137-138)

19. Contrast short term and long term memory. What changes occur in the brain when a memory trace is created? (141-142)

20. Be able to explain how the layers of the meninges are arranged and what the spaces between layers and within layers are called (i.e., dura mater, superior sagittal sinus, subdural space, arachnoid mater, subarachnoid space, and the pia mater). (146&148)

21. What are two functions of cerebrospinal fluid? (148)

22. Explain where cerebrospinal fluid is produced, how it circulates around the brain and spinal cord, and where it is reabsorbed into the brain. (148-149)

23. What is blood brain barrier? What type of nerve cells form the blood brain barrier? (149-151)

24. Draw a diagram of the brain showing the location of the following: cerebrum, cerebellum, diencephalons, and brainstem. Also be able to show the following parts: epithalamus, thalamus, hypothalamus, midbrain, pons, and medulla oblongata. Be able to show the following fissures: medial longitudinal fissure and transverse fissure. What are the major functions of the different parts of the brain listed above.

25. Be able to draw and identify the major lobes of the cerebral cortex (i.e., frontal, parietal, temporal, occipital, and insula). Be able to identify the central sulcus, lateral sulcus, precentral gyrus, and postcentral gyrus.

26. What are the major functions of the precentral gyrus and the postcentral gyrus (154)?

27. Explain the differences between sensory areas, motor areas, and association areas. (155)

28. Explain the functions of the commissural fibers, association fibers, and projection fibers. (157)

29A. What are nuclei? (158)

29B. What are basal nuclei? What are the functions of the corpus striatum (i.e., caudate nucleus, putamen, and globus pallidus)? (158)

30. What is the limbic system and what are three of its functions? Where is the limbic system found? (159)

31a. The pineal gland is associated with what part of the brain and what is its function? (160)

31b. What is the function of habenular nuclei? (160)

32. What are three functions of the thalamus? (160)

33. What are six things the hypothalamus regulates or controls? (161-162)

34. What are two functions of the cerebellum? (163)

35. What two things does the reticular formation regulate and where is it found? (164-166)

36. What are the functions of the midbrain other then those found in the reticular formation (i.e., substantial nigra, red nucleus, and the superior and inferior colliculus)? (164-)

37. What is the major function of the pons other then those found in the reticular formation (i.e., pneumotaxic and apneustic areas)? (166)

_____

_____

38. What two major things does the medulla oblongata control (i.e., the cardiovascular center and the medullary rhythmicity center)? (166)

_____

_____

_____

_____

39. Where do cranial nerves originate and where do spinal nerves originate? How many pairs of cranial nerves are there? (167)

_____

_____

40. What nerves are capable of repairing cut axons? (167)

_____

_____

41. On a diagram of the brain be able to match the cranial nerves with their name and number. (167-168) [Abducens, Accessory, Facial, Glossopharyngeal, Hyopglossal, Olfactory, Optic, Trochlear, Trigeminal, Vegas, Vestibulocochlear]