Neuroanatomy Final Exam

April 15, 2009

1:00 P.M.

Name: _____ _____

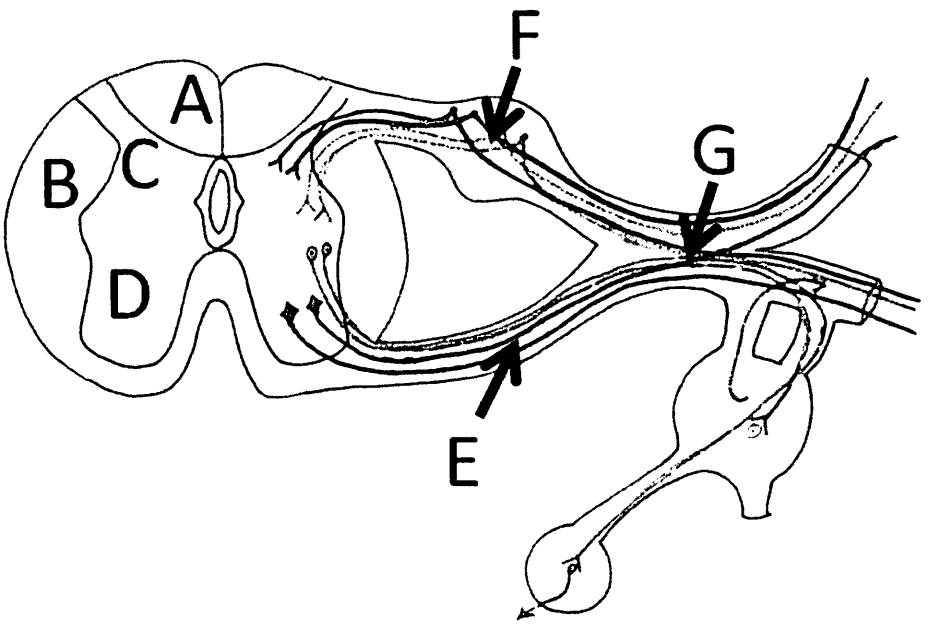
There are 50 questions for this examination. Each is worth 2 points. These questions will be graded by computer and must be answered on the accompanying computer answer sheet. On the computer answer sheet, your name should be printed in the boxes indicated and the appropriate circles below each letter filled in. Also fill in your Student ID number and the appropriate circles below each number.

Write Marino in the space provided for instructor.

On the back of the computer sheet there is a place for your signature and the date. Please fill these out.

Record your answer for each multiple choice question on the computer sheet. Mark each correct response with a #2 pencil on the answer sheet using numbers 1 – 100. If you erase be sure to erase completely.

There is only once correct answer for each question.



1. In the diagram above, the first order axons carrying pain and temperature information would be found at:

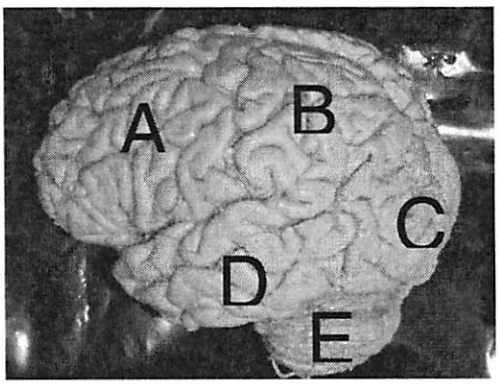
A. A and B
B. F and C
C. D and C
D. D and B.

2. In the diagram above, axons carrying information from the cortex to the neurons innervating fine distal muscles would be labeled?

3. The posterior funiculus is labeled?

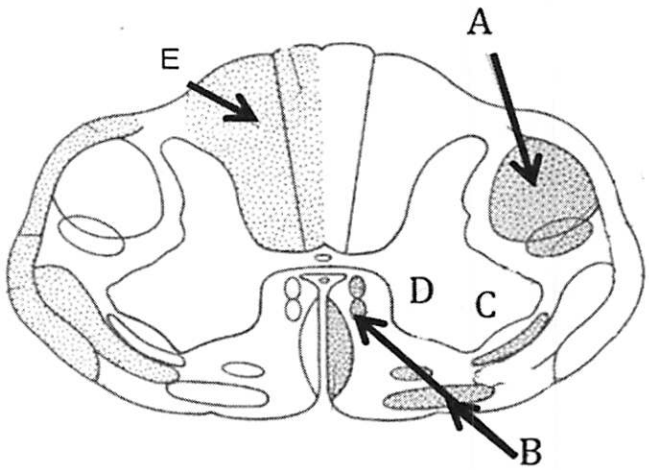
For questions 4 – 7 Match the structure/function with the part of the brain.

4. Vision
5. Information about joint position is located at:
6. Object identification and semantic knowledge is located at?
7. Planning motor programs is located at?



Questions 8 - 10

8. Location of ascending pathways from cells carrying vibratory sense.
9. Upper motor neurons for axial musculature and balance.
10. Flaccid paralysis of hand muscles with rapid atrophy would occur with a lesion at:



For questions 11 – 13 match the adult structure on the left with the embryonic structure it develops from on the right.

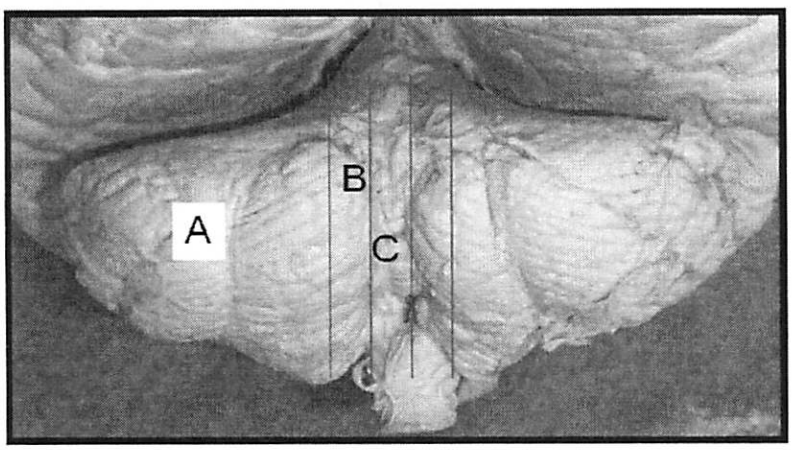
11. Cerebral cortex
12. Thalamus
13. Spinal Nucleus of 5.
14. Facial nucleus.
15. Oculomotor nerve.

A. Telencephalon
B. Diencephalon
C. Mesencephalon
D. Myelencephalon
E. Metencephalon

16. Upper motor neurons that regulate neurons involved in innervating the lumbricals and interosseus muscles would be found in the:

A. Pyramids.
B. Posterior funiculus of the spinal cord.
C. Anterior limb of the internal capsule
D. Tegmentum of the pons.

Questions 17 – 19 involve the cerebellum and its connections.



17. Important in posture and balance especially in walking.
18. Connects to the vestibular system.
19. If lesioned would lead to dysmetria

20. A tremor at rest would be indicative of a lesion in:
    A. Cerebellum
    B. Basal Ganglia
    C. Dorsal Root
    D. Ventral Root

21. Which of the following basal ganglia nuclei receives direct input from the cerebral cortex?
    A. Putamen.
    B. Globus pallidus.
    C. Substantia nigra.
    D. Subthalamic nucleus.

22. First order neuron nerve cell body for vibratory sense is located in the:
    A. Gray matter of the dorsal horn.
    B. Dorsal root ganglion
    C. Medulla
    D. Pons

23. The region in the cortex where the face primary sensory cortex is found in the:
    A. Precentral gyrus
    B. Frontal lobe.
    C. Postcentral gyrus.
    D. Paracentral lobule

24. Recognition of fear is part of emotional memory and an important structure involved in this function is the:
    A. Caudate nucleus.
    B. Thalamus
    C. Olive
    D. Amygdala

25. Fibers from the thalamus synapse on cells in layer:

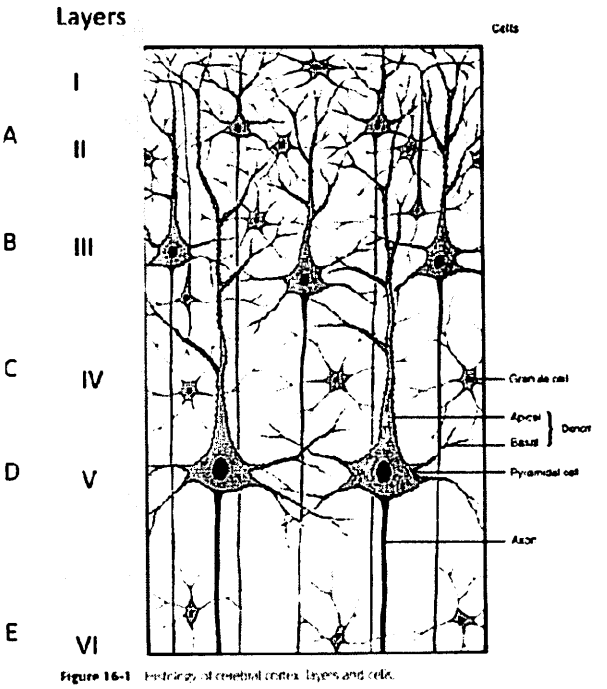


Figure 16-1

Match the cranial nerve exit location from the brain stem:

26. Trigeminal (CN V)	**A. Medulla**
27. Hypoglossal (CN XII)	**B. Pons**
28. Spinal Accessory (CN IX)	**C. Midbrain**
29. Oculomotor	**D. Spinal cord**

30. Pain sensation from the oral cavity travels into the brainstem and first synapses in the:
   A. Chief (main, principal) sensory nucleus of V
   B. Mesencephalic nucleus of V
   C. Trigeminal ganglion
   D. Spinal nucleus of V
   E. Spinal tract of V

31 – 35. You are reviewing the 5 neuroanatomical structures that convey sound to your auditory cortex. In order, they are:

A. Spiral ganglion
B. Cochlear nuclei
C. Lateral lemniscus
D. Medial geniculate nucleus of the thalamus
E. Transverse temporal gyri in temporal cortex

36. A complete severance of CN V can result in which one of the following

A. deafness in one ear.
B. vertigo.
C. loss of pupillary light reflex.
D. loss of jaw jerk reflex.

Match the visual field deficit with the lesioned structure:

37. Optic tract	A. Complete blindness in 1 eye
38. Optic radiations	B. Homonymous hemianopia.

39. Which ONE of the following structures would be involved in conveying afferent taste stimuli into the CNS when eating a meal?

A. CN 5 ganglion (trigeminal).
B. Chief sensory nucleus of V.
C. Solitary nucleus and tract.
D. Motor nucleus V.

40. Accommodation in doing close-up dental work involves which one of the following?

A. Oculomotor complex.
B. Temporal lobe.
C. CN X – vagus.
D. CN VII – facial.

41. Axons from neurons in the hypothalamus project to the spinal cord via the:

A. thalamus
B. descending autonomics to spinal cord
C. medial lemniscus
D. trigemino-thalamic tract

42. A tumor of the pituitary gland would most likely affect the:

A. Pons
B. Midbrain.
C. Hypothalamus
D. Temporal lobe.

43. Both feeding behavior and temperature regulation are mediated by which part of the CNS?

A. Diencephalon
B. Telencephalon

44. Preganglionic parasympathetic neuron cell bodies innervating the bladder are found in the:

A. Vagal nucleus
B. Hypothalamus preoptic area
C. Pons
D. Cervical spinal cord
E. Sacral spinal cord

45. Neuron cell bodies innervating the skeletal muscle of the external sphincter are found in the:

A. Thalamus.
B. Hypothalamus preoptic area.
C. Medulla.
D. Cervical spinal cord.
E. Sacral spinal cord.

46. Cells bodies whose peripheral touch receptors are in the oral cavity are found in the following:

A. Chief (main, principal) sensory nucleus of V
B. Mesencephalic nucleus of V
C. Trigeminal ganglion
D. Spinal nucleus of V
E. Thalamus

47. Cells bodies that are the afferent limb of the jaw jerk reflex are found in the following:

A. Chief (main, principal) sensory nucleus of V
B. Mesencephalic nucleus of V
C. Trigeminal ganglion
D. Spinal nucleus of V
E. Thalamus

48. The motor nucleus of the trigeminal system is found in the:

A. Midbrain.
B. Pons
C. Medulla
D. Cervical spinal cord

49. A patient has a total right sided facial paralysis. You know this is a result of a loss of.

A. the upper motor neurons to the facial nucleus.
B. the facial motor nucleus.
C. the zygomatic branch of the facial nerve only.
D. the mandibular branch of the trigeminal nerve.

50. The language network:

A. Is right hemisphere dominant.
B Involves Wernicke's area for motor function.
C. Involves Broca's area for sensory receptive function.
D. uses the right side of the brain to add emotional content and speech intonations.