

Biology 358 — Neuroanatomy

Second Exam

Please **print your name clearly** on the back of the last page of this exam. Please read the instructions preceding each section carefully.

You must answer *all* questions on this exam. Because statistics demonstrate that, on average, between 2-5 questions on every exam are ambiguous enough to come out "aberrant" on an item analysis the total number of points possible on this exam is 106. However, grades will be calculated out of a possible 100 points, assuming that 2-3 questions on this exam are aberrant.

Section 1: Essay Questions. Answer the following questions on the accompanying blank sheets of paper. *Please answer only one question per sheet of paper, and answer the questions in order.*

1. This term we have talked about various levels of the brain, starting with the Pons and ending with the Diencephalon. You are to *compare and contrast a cross section of the Pons with a cross section of the Mesencephalon.* (15 points)
2. Correlate the anatomy of the cerebellum to the function of the cerebellum. (15 points)

Section 2: Diagram labeling. The following pages are unlabeled diagrams of either spinal cord or some portion of the brain. Utilizing the blue marker supplied to you, label the following structures on the diagram. **Outline the area in the diagram where the structure would be found, and then extend a line from the diagram out to the white margin. (You need to do this on one side only).** In the white margin label the outlined segment with the number found to the left of the structures listed below. **However, if the structure is not found on the segment** put the number in the margin of the segment and mark the structure **NFOS** (not found on segment). (2 points each)

HBS-10

3. Inferior cerebellar peduncle
4. Superior cerebellar peduncle
5. Middle cerebellar peduncle
6. SON of pathway that conveys pain, temperature and crude touch
7. SON of pathway that conveys two-point discrimination, fine touch, pressure and proprioception
8. Pontine reticular formation (entire structure)
9. Neuronal processes of LMN of pyramidal system

HBS-11

10. Inferior cerebellar peduncle
11. Superior cerebellar peduncle
12. Middle cerebellar peduncle
13. SON of pathway that conveys pain, temperature and crude touch
14. SON of pathway that conveys two-point discrimination, fine touch, pressure and proprioception
15. Pontine reticular formation (entire structure)
16. Neuronal processes of LMN of pyramidal system

HBS-14

17. Inferior colliculus
18. Superior colliculus
19. Lateral lemniscus
20. Reticular formation
21. Neuronal processes of LMN of pyramidal formation
22. Neuronal processes of UMN of pyramidal formation after decussation
23. Medial geniculate body
24. SON of pathway that conveys pain, temperature and crude touch
25. SON of pathway that conveys two-point discrimination, fine touch, pressure and proprioception

HBS-16

26. Inferior colliculus
27. Superior colliculus
28. Lateral lemniscus
29. Reticular formation
30. Neuronal processes of LMN of pyramidal formation
31. Neuronal processes of UMN of pyramidal formation after decussation
32. Medial geniculate body
33. Crus cerebri
34. Red nucleus
35. Substantia nigra
36. SON of pathway that conveys pain, temperature and crude touch
37. SON of pathway that conveys two-point discrimination, fine touch, pressure and proprioception