NEUR0010: Exam 2 Study Tips
Prepared by Ronnie Li

As the exam is getting closer, I thought I'd share some brief strategies and tips with you to prepare for the second Neuro 1 exam, which is definitely the hardest out of the three exams you will have taken by the end of the course. I hope you've already started studying because unlike Exam 1, this exam is not as straightforward, and there is a lot more material to memorize. The professors will test your knowledge not only of the facts, but of the more conceptual components of the systems.

Based on an educated guess, if you memorize only the facts about the neural systems, chances are you can score in the 80s. But what distinguishes A-students from the rest is the students' ability to apply the principles of what they've learned to questions that don't directly test simple facts. Here's an example, rephrased from a real exam question that I've graded:

Under what conditions will light from an object undergo the most refraction as it enters the eye?

(a) Bright environment and when the object is close
(b) Bright environment and when the object is far
(c) Dim environment and when the object is close
(d) Dim environment and when the object is far

At first glance, you know that light reflected from close objects bends more as it enters the eye (that's a fact), so you eliminate choices (b) and (d). But what does the brightness of the environment have to do with anything? Here is the part where your reasoning skills come in. A bright environment will cause the pupils to constrict, limiting the amount of light that enters the eye, thus reducing the amount of bending that the light undergoes. On the other hand, a dim environment causes the pupils to dilate, allowing more light to come in, so the light entering at the very edges of the pupil must bend more to form a crisp image on the retina. The correct answer choice is (c).

All that said, here are four tips you might find useful in preparing for the exam:

- **If you have not started studying yet, do not attempt to read the book unless you want to clarify a concept unclear from lecture**. Your best bet is to re-watch lecture capture and go off of the information from the slides. An exception would be the auditory system; read the chapter on that in the book.
- Regardless of your progress in studying, **everyone** should be doing practice questions, checking their answers, and seeing why they got certain questions wrong. The practice questions up to 2012 are posted on my website and on Canvas, and the professors should have the exams from 2013-2015 on Canvas. Don't hesitate to email your TAs, the professors, or me!
- Make sure you know the various ascending and descending pathways; there are quite a few to know! In addition to knowing the structures in the pathways, make sure you know a bit about where these structures are in the brain. For example, the superior olive is in the brainstem, the inferior colliculi are in the tectum of the midbrain, and the MGN (medial geniculate nucleus) is in the thalamus. Also know where these pathways decussate, if they do decussate. I would suggest getting a piece of printer paper, placing it horizontally, and drawing all the pathways side by side, making note of similarities and differences.
- I will assume that you will attempt to memorize all the facts that were presented to you in lecture. However, aside from that, you should maintain an inquisitive mind and continuously ask the question, "What if?" For example, what if I made a lesion of primary auditory cortex on one side of the brain—would that result in deafness? What if I cut all the axons that decussate at the medulla on the right side of the spinal cord at level T5—what deficits should I expect to see? This sort of inquiry and "messing around" will lead you to discover new insights about these systems.

Happy studying, and please feel free to contact me with any questions. Good luck on the exam!

Email: ronnieli0114@gmail.com
Cell: 516-987-2885
Website: www.ronnieli.com/neur0010