Bi 360: Final Exam Review

Taking the Exam

- Do not worry about the words you do not know. In many cases, these words will not affect your performance on the problem. You can always look up the definition for these words if you need to.

- Look for keywords in the problem to determine what concept the question is testing you on. When you have narrowed down the concept, recall what you know about that concept and get comfortable with it. You do not need to know all of the details at this moment, but you want to trust that you have a good understanding of the concept before tackling the problem. Once you feel comfortable with what you know, determine how the question affects your knowledge.

  a) Does the question reiterate a concept you already know in a new/different context?

  b) Does the question connect two ideas together that you never knew were related?

  c) Does the question contradict what you know?

      - If it does, why? Can you rectify the differences?

Now is not the time to second guess yourself; you took all that time to make sure you were comfortable with the material before you started, so trust yourself.

  d) Does the question expand on your knowledge such that you are required to synthesize new information while incorporating old information?

- Once you have a good idea of what the question is asking you, write your answer/thoughts on a separate sheet of paper. Read through it and decide if you have incorporated all information relevant to the question. **Points will be removed for too much information as well as information that is wrong. This includes wrong information in extraneous text.**

- Make sure all submitted answers are concise, well written, and flow logically. The latter can be achieved through the use of proper transitional words/sentences. Do not ignore grammar!
Material to know from the first half of class

How a single cell works
- resting membrane potential
  - the role of various ions and ion channels (all types)
- passive potentials
  - the role of ions and ion channels (all types)
  - the role of the membrane
  - time constant
  - length constant
- Action Potentials
  - the role of ions and ion channels (all types) with special attention on voltage-gated sodium and voltage-gated potassium channels.
  - threshold – what does this mean for a cell?
  - the rising phase/falling phase
  - the refractory period
  - the role of myelin in salutatory conduction
  - time constant

Material to know from the second half of class

Receptors
 Generator Potential
 Amplitude/Frequency Coding

Olfactory System
- second messenger systems
- lateral inhibition

Gustatory System
- types of taste and mechanisms of detection associated with each

Across Neuron/Labeled Line Hypothesis

Developmental Neurobiology
- growth cone dynamics
- chemotaxis
- synaptogenesis

Central Pattern Generator
 Postinhibitory Rebound
 Habituation/Sensitization
 Long Term Potentiation