**Review for Exam Four, BSC 181**

Please note that this review does not cover ALL of the material discussed in the lecture notes. *It is meant as a guide only*. Exam questions will come from the lecture material, not this review. Please be familiar with all of the topics we discussed in lecture.

1. What’s the difference between the somatic nervous system and the autonomic nervous system?
2. Identify the cell types in the nervous system and discuss their functions: both nerve cells and the different types of glial cells.
3. What’s the difference between a tract and a nerve?
4. Which cells produce myelin and how?
5. What’s the difference between white matter and gray matter?
6. What are the structural classifications of neurons? The functional classifications?
7. How would you describe a resting membrane potential? How would you calculate one?
8. Which ions are where across an axon at rest?
9. Define and understand the following terms: action potential, depolarization, repolarization, hyperpolarization
10. How do the ions move across the axon membrane in each of the above terms?
11. Compare a graded potential to an action potential
12. How is threshold defined?
13. If all action potentials fire off with the same intensity, how does the brain interpret a strong stimulation versus a weak one?
14. Discuss absolute and relative refractory periods
15. Describe how the impulse reaches the axon terminal and crosses the synapse. Discuss also the role of enzymes.
16. Describe IPSP versus EPSP
17. Compare spatial to temporal summation
18. Where are the ventricles located? How are they interlinked?
19. Compare the functional areas of the cerebral cortex.
20. The four motor areas are what? What are their functions?
21. What are the sensory areas and their functions?
22. Which brain areas are associated with language?
23. What categories of white matter are seen in the cerebrum?
24. What are the basal nuclei and what are their functions?
25. Compare thalamus location and function to hypothalamus location and function
26. Which structures are associated with the epithalamus?
27. What are the three divisions of the brain stem and their functions?
28. Describe each of the meningeal layers
29. How and where is CSF produced? What is its function?
30. What is the blood-brain barrier and what does it do?
31. What are the gray areas of the spinal cord? The white areas
    1. Which features are found in these areas?
32. What are the ascending and descending pathways? What (specific) type of info do they carry?
33. How is a “first order neuron” defined? Where is its soma?
34. How is a “second order neuron” defined? Where is its soma?
35. How is a “third order neuron” defined? Where is its soma?
36. Where is an “upper motor neuron” located?
    1. What outcome is seen if damage is done to an UMN?
37. Where is a “lower motor neuron” located?
    1. What outcome is seen if damage is done to a LMN?
38. Compare Direct to Indirect systems with regards to motor pathways
39. What do the Pyramidal Pathways control? Where do they originate?
40. Compare Flaccid to Spastic paralysis























