**PSY 511.001**

**Fall 2020**

**Quiz 1**

(10 points + 2 optional bonus points)

**Instructions**

Type answers to the questions below in the spaces provided using complete sentences. Most answers should be a few sentences in length. You may add a simple diagram if it helps you, but this is not required. Save a copy of the quiz using the following naming format: PSY511.001-2020-quiz-01-LASTNAME.docx, substituting your last name for LASTNAME.

Please take no more than 45 min to complete this quiz, and please do not use any resources other than your own memory.

Email a copy to me at rog1@psu.edu by 2:00 PM on Thursday, October 1, 2020.

**Questions**

1. Describe the concentration and electrostatic gradients that act on K+ in the neuron at rest.

1. Describe the concentration and electrostatic gradients that act on Na+ in the neuron at rest.
2. What event(s) trigger the *rising phase* of the action potential?
3. The movement of which ion causes the *falling phase* of the action potential? Which direction does this ion move during the falling phase, and why?
4. Describe the main components of the central nervous system associated with the lateral ventricles.
5. What kind of imaging technique is electroencephalography (EEG)? What does it provide information about?
6. Using the figure below, label the planes of section and as many of the following directional terms as you are able to use: anterior/posterior; superior/inferior; medial/lateral; dorsal/ventral.

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1. What are the two main classes of myelin-producing glial cells, and where are they found?
2. Functional MRI (fMRI) is considered an *indirect* measure of neuronal activity because...
3. Describe at least two ways that neurons differ from other cells in the body.

**Bonus**

1. What technique for recording neural activity has especially high spatial and temporal resolution?
2. Where in a neuron would one find Nodes of Ranvier? What purpose do they serve?