**PSY 511.001**

**Fall 2021**

**Quiz 3**

(10 points)

**Instructions**

Type answers to the questions below using complete sentences. You may take a bit more space than indicated below if needed, but please be concise.

Please take no more than 45 min to complete this quiz. You *may* use your textbook or other online sources to answer these questions. If you do use other sources, please indicate that in the resources section at the end of the document.

Email a copy to me at rog1@psu.edu by 5:00 PM on Friday, December 3, 2021.

**Questions**

1. The NMDA receptor is thought to be a component of the brain's associative learning system. What features of the NMDA receptor enable it to signal that both the sending and receiving cell are co-active?

2. Briefly describe at least one other facet of the NMDA receptor's role that recent research into the neurobiology of psychiatric disease has revealed.

3. Name a brain area that is a central node in the brain's “reward” processing network and one of the neurotransmitter systems that contributes to this type of processing.

4. The hippocampus appears to specialize in storing particular kinds of information. Give an example.

5. Both the autonomic and neuroendocrine systems are controlled by this brain area in the diencephalon. What is it? Which two 'axes' originate here?

6. True or false: The topographic arrangement of neurons found in many sensory systems extends to the motor system, including the spinal cord. Explain your answer.

**7**. What change in brain structure appears common to chronic stress and major depressive disorder?

8. What does ketamine do pharmacologically? Why is it the target of such intensive research interest?

9. Choose the answers below that best fit the following statements.

The \_\_\_\_\_\_\_ cranial nerve conducts visual information; the \_\_\_\_\_\_ cranial nerve conducts auditory information; the \_\_\_\_\_ cranial nerve conducts olfactory information; the \_\_\_\_\_\_ or vagal nerve provides the bulk of parasympathetic nervous system output.

I (1st)

II (2nd)

III (3rd)

VIII (8th)

X (10th)

10. The hypothalamus releases \_\_\_\_\_\_\_\_\_\_\_\_\_ into the posterior pituitary, thereby influencing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and other functions associated with reproductive and affiliative behavior.

**Bonus**

11. How does the myotatic (stretch) reflex circuitry avoid tremor caused by competition between the agonist and antagonist muscles that control a joint like the elbow?

12. Briefly describe what evidence supports the use of animal models in studying fear or anxiety in humans?

**Resources consulted**