1. What brain structures were damaged in HM? What were HM's cognitive deficits (i.e., what sorts of learning/memory tests did he fail)? What sorts of learning/memory tests did he perform normally? How do you think HM or another patient without a medial temporal lobe would perform on a delay conditioning test (let's say that a tone serves as the CS and an unpleasant air puff to the eye that causes an eye blink is the US)? Please explain.

2. Suppose you are working on a project in your lab examining an embedded tissue block from the rat hippocampus, specifically synapses between Schaffer collaterals and CA1 pyramidal cell dendrites, and your goal is determine which glutamatergic synapses are “silent”. What is meant by a “silent” synapse? Would it be possible to determine which synapses are silent by using electrophysiology? If not, how?

3. Long-term potentiation (LTP) is input specific. What does this mean and how was this demonstrated?

4. What is a tetanus? How is synaptic plasticity affected by the strength of this tetanus?