

9.01 Study Questions

Sessions 5 – 7 lecture Questions

1. What is meant by the "resting potential"?
2. How does a semipermeable cell membrane result in a resting potential?
3. What is the response of a neuron (or some other cell) to mechanical irritation?
4. Draw a long-axon neuron with the major structural parts named.
5. What are the three major functional divisions of such a neuron?
6. What is the sodium pump? What is its role in the conduction of the action potential?
7. Contrast: excitatory and inhibitory postsynaptic potentials.
8. Summarize the meanings of "temporal summation" and "spatial summation" in neurons.
9. Contrast neurotransmitters and neural hormones. Give an example of each.
10. Describe at least three types of synapses as seen with the electron microscope.
11. What are transducer mechanisms? How are they related to synaptic mechanisms?
12. Contrast exocytosis and endocytosis at axonal endings.
13. What is intra-axonal transport?
14. How are endocytosis and axonal transport used by neuroanatomists to trace axonal pathways and connections? Give an example.
15. What is "endogenous activity" in neurons? Why does it call for modifications of the reflex model in explaining behavior?

Session 5-7 Reading Questions

Rosenzweig chapter 3

From the Study Guide:

1.1, 1.2,, 2.1, 3.2, 4.1, 4.2, 4.5, 5.4, 6.4, 7.2, 8.3, 8.4, 9.4, 11.3, 11.4, 17.1, 19.2, 20.1, 23.2, 24.3

"Important terminology"

"Highlighted scientists": Hodgkin & Huxley, Hebb.

Rosenzweig chapter 4

From the Study Guide:

1.3, 2.1, 3.2, 4.4, 5.2, 7.1, 7.4, 8.5, 9.1, 12.2, 13.1, 14.2, 15.1, 16.1, 18.2, 20.1, 22.2, 27.1, 27.3

"Important terminology"

Rosenzweig chapter 5

From the Study Guide:

1.3, 1.4, 2.1, 2.2, 4.0, 4.4, 5.2, 7.1, 7.2, 9.2, 9.3, 10.1, 11.1, 11.2, 12.1, 12.2, 13.2, 13.3, 14.2, 14.4, 15.1, 16.2, 17.1, 19.1, 19.2, 19.3, 26.2

Rosenzweig chapter 6

From the Study Guide:

1.1, 2.4, 3.1, 3.2, 3.3, 6.1, 6.2, 6.3, 8.2, 9.2, 10.1, 10.2, 10.3, 11.1, 14.3, 14.4, 15.1

Rosenzweig chapter 8

From the Study Guide:

4.4, 5.2, 6.2, 7.1, 7.2, 8.1, 8.2, 10.1, 11.1, 12.1, 13.1, 13.2, 15.1, 16.3, 17.1, 18.1, 19.1, 20.3, 21.2, 21.3, 22.2, 22.3, 22.4, 24.1, 25.1, 25.3, 26.2