ADAM Neuron Anatomy Review:

1. (Page 1.) Neurons communicate with other cells at junctions called _____.

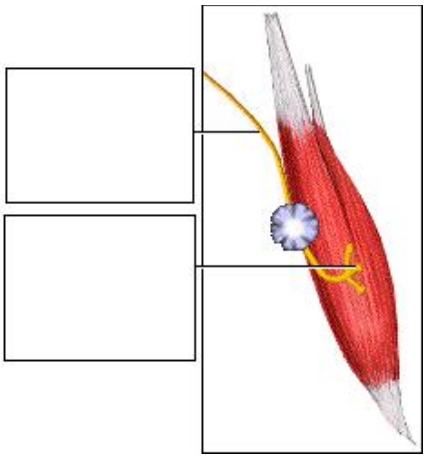
2. (Page 1.) Neurons form synapses with _____, _____, and _____ _____.

3. (Page 3.) Skeletal muscle is activated by neurons of the _____ _____ _____.

4. (Page 3.) Cardiac muscle, smooth muscle, and glands receive signals from neurons of the _____ _____ _____.

5. (Page 3.) A synapse between a somatic motor neuron and a skeletal muscle fiber is called a _____ _____.

Label the diagram on the right



6. (Page 3.) When an action potential arrives at a neuromuscular junction, it initiates a series of events which excite the underlying muscle fiber, causing it to _____.

8. (Page 3.) Signals in the autonomic nervous system travel over a ____ _____ _____ to their effector organ. The second neuron, or autonomic motor neuron, contacts the organ.

9. (Page 3.) Signals from some autonomic motor neurons cause the heart rate to _____.

11. Signals from some autonomic motor neurons cause smooth muscle to _____. Signals from other neurons cause smooth muscle contractions to _____ or _____.

13. (Page 3.) Signals from the central nervous system can cause glands to _____.

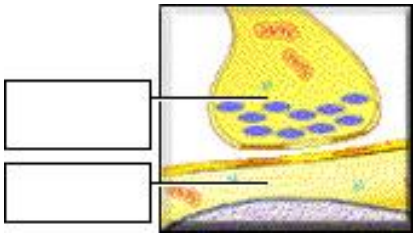
14. (Page 4.) In addition to sending signals to _____ _____, neurons send signals to each other.

15. (Page 4.) Neurons can excite or inhibit other _____.

16. (Page 4.) The neuron that synapses on the dendrites of this cell excites it and causes it to generate an _____ _____.

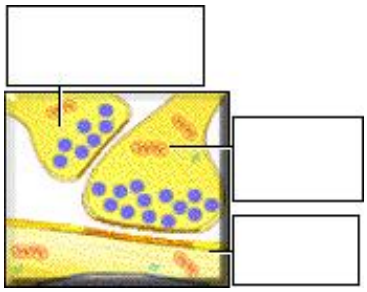
17. (Page 4.) The neuron synapsing on the soma inhibits the cell and prevents it from generating an _____ _____.

19. (Page 5.) In the brain, a variety of synapses have evolved to serve complex transmission needs between neurons. Synapses located between axon terminals of one neuron and _____, _____, or _____ of another are most common.

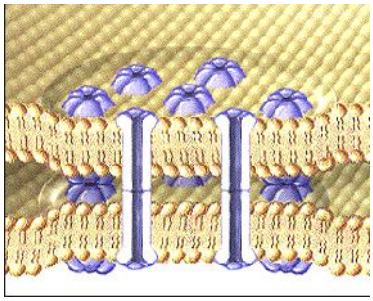


20. (Page 5.) What are the four types of synapses?

Identify the types of synapses on the right and label them.



21. (Page 6.) There are two major types of synapses, _____ and _____.



22. (Page 6.) Electrical synapses depolarize and generate action potentials simultaneously. When one neuron forms a gap junction with another neuron, an _____ _____ is made.

23. (Page 6.) Electrical current, in the form of ions, flows directly from one neuron to the other through the _____ _____.

24. (Page 6.) Electrical synapses are always _____.

25. (Page 6.) Electrical synapses have two advantages. List these advantages.

26. (Page 7.) At a chemical synapse, neuronal membranes are separated by a gap called the _____ _____.

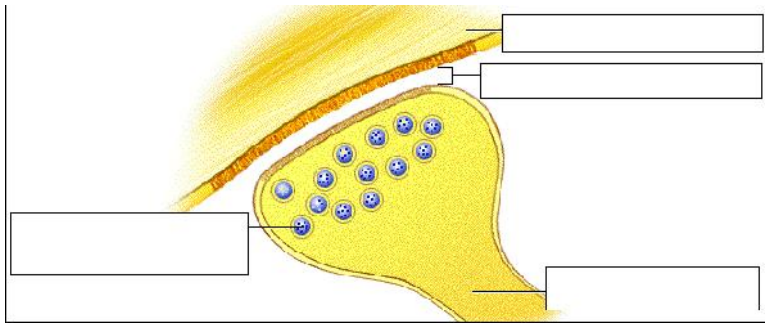
27. (Page 7.) Electrical current cannot flow directly from one neuron to the other. A chemical, called a _____, is released from the sending axon and carries the signal to the next neuron.

28. (Page 7.) Chemical synapses transmit signals more slowly than _____ _____ but the signal may be either _____ or _____, and the signal can be modified as it passes from one neuron to the next.

29. (Page 7.) Chemical synapses are the most common type of _____, and they are associated with the most complex human behaviors, including _____ and _____.

31. (Page 8.) What are the two parts of a chemical synapse?

- Label the parts of this synapse.



32. (Page 8.) The neuron conducting an action potential toward the synapse is called the _____ _____ .

33. (Page 8.) The axon terminal of the presynaptic neuron contains membranous sacs called _____ _____ which are filled with _____.

34. (Page 8.) The gap separating the cells is called the _____ _____.

35. (Page 8) Describe what is happening in the image below using all of the proper terminology in your answer.