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SYNAPTIC TRANSMISSION WORKSHEET

(pp. 566-569)

Fill in the Blanks:

When action potentials reach the	zone of a neuron, they usually induce the
neuron to release one or more	These are
molecules that	across chemical synapses.
neuron to release one or more molecules that Synapses may occur between 2	or between a
and a	_ cell or
Neurotransmitter molecules are stored in synaptic	c in the cytoplasm of
the synaptic cell (neuron). Gated channels	for ions open with the
arrival of an	. An (influx / efflux?)
of calcium ions occurs. When they flow in,	are
arrival of an of calcium ions occurs. When they flow in, induced to fuse with the neuron membrane and the calcium in the calcium i	ne neurotransmitter is then released into the
Neurotransmitters diffuse across and bind with spanning on the membrane of the the of the proteins, so that their interior now diffuse through	synaptic cell (neuron). Binding changes ta opens up to
How the postsynaptic cell (neuron) responds dep neurotransmitter; its and gated and whether the channels are primed to	ends on: the of in the cleft; the particular kinds of in the postsynaptic cell;
and whether the channels are primed to	-
If a neurotransmitter has an "excitatory" effect, it toward the of an of inhibitory" effect it drives the membrane	
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Questions (answer on note paper):

- 1. What positive ion is likely to enter the postsynaptic neuron to cause depolarization to excite a neuron to fire an action potential?
- 2. What negative ion is likely to enter the postsynaptic neuron to cause hyperpolarization to inhibit production of an action potential?
- 3. Briefly state the function of the following neurotransmitters and neuromodulators: serotonin, norepinephrine, dopamine, GABA, substance P, endorphin
- 4. Explain the effects of *Clostridium botulinum* and *Clostridium tetani* on the nervous system.