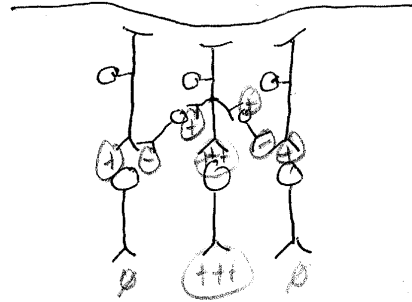


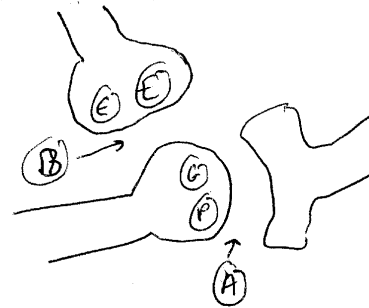
24 On the diagram of lateral inhibition, please indicate which synapses are inhibitory and which are excitatory (draw a (-) or a (+)).



25 What does lateral inhibition accomplish?

precise localization of a stimulus
 - increased acuity
 - contrast

26 The neuropeptide, enkephalin, can result in analgesia (less pain being perceived), as shown in the diagram. The synapse where enkephalin functions (synapse B) is axo-axonic (axo-dendritic/axo-somatic/axo-axonic).



27 How does enkephalin act to reduce synaptic transmission at the synapse labeled 'A'?

makes voltage-gated Ca²⁺ channels harder to open
 ∴ less neurotrans release following an AP

28 The sense of balance/position in space is conveyed by three senses. They are: Proprioception, vision and vestibular system

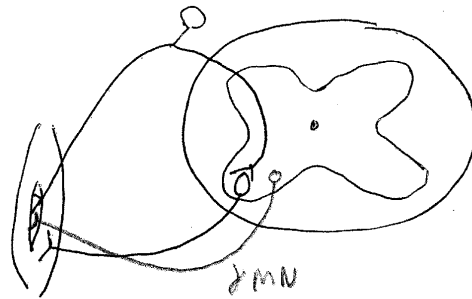
29 Which sensory system has the most direct neuronal pathway to the limbic system?

olfactory

30 In the entire effective branch of the peripheral nervous system, only two neurotransmitters are used. What are they? acetylcholine and norepinephrine

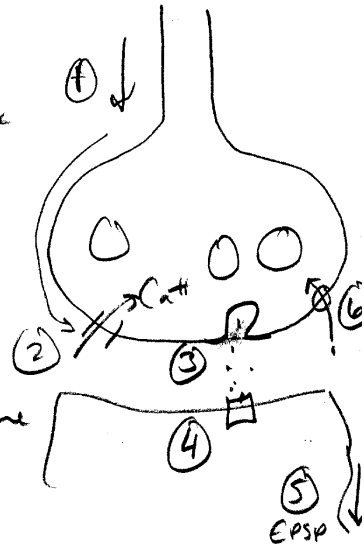
31 In the diagram of a stretch reflex, draw a gamma motor neuron (show where cell body is and where synaptic knob is).

32 Briefly describe the function of the gamma motor neuron. re-sets the spindle organ to allow voluntary movement



34.

- 1) AP in presynaptic neuron
- 2) depolarization of synaptic knob opens voltage-gated Ca^{++} channels
- 3) Ca^{++} entry causes fusion of synaptic vesicles with plasma membrane
- 4) neurotransmitter diffuses across synaptic cleft and binds to receptors
- 5) Activation of receptors causes a change in postsynaptic membrane potential (EPSP or IPSP)
- 6) Neurotransmitter is removed from synapse



35.

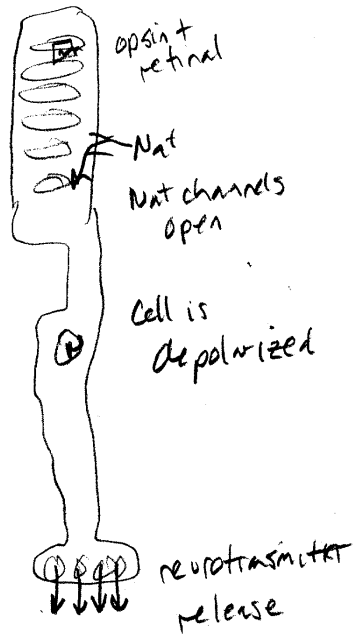
GABA DA Ach NE Glut.

all are neurotransmitters
 All synthesized in synaptic knob & pumped into vesicles

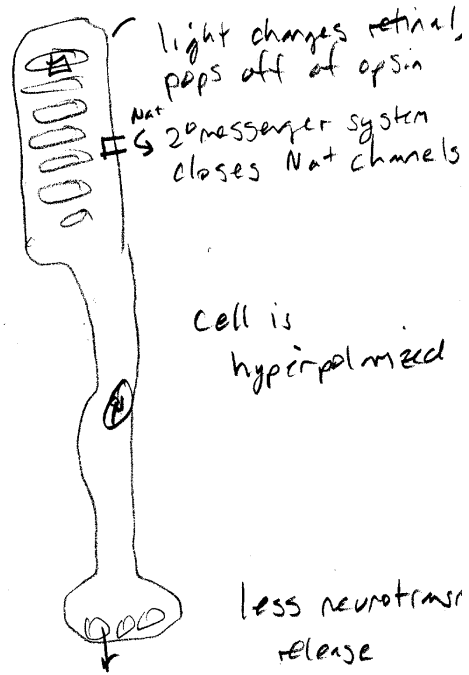
iono.	metabo.	iono/metabo	metabo.	iono. primarily
generally causes an EPSP, GABA receptors influenced by Valium	involved in drug addiction	transmitter of the neuromuscular junction	important in autonomic NS	major excitatory transmitter; important for memory/learning

36. Photo receptor

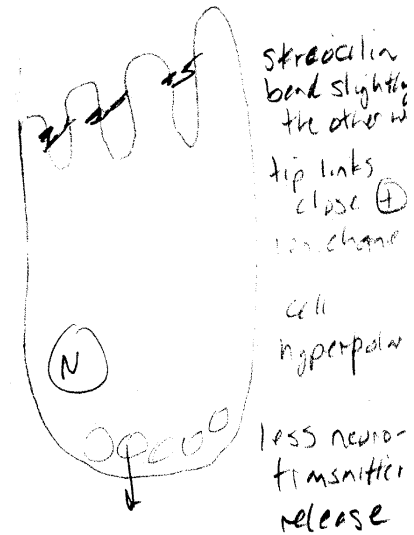
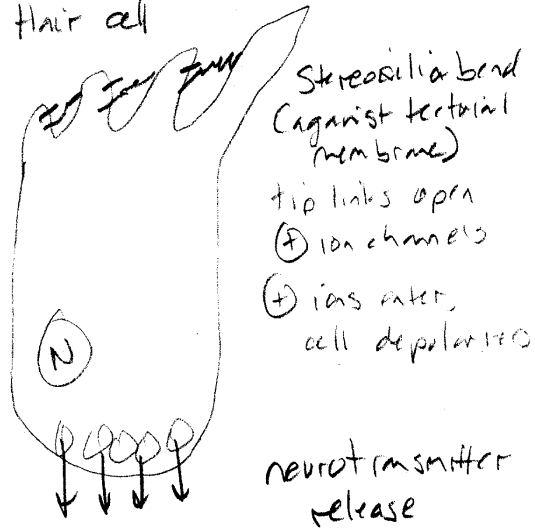
DARK



LIGHT



36. Hair cell



36. taste - see text fig. 10-15 - only one of the tastes needs to be described