

The Synapse

1. Homeostatic imbalance: an autoimmune disease that usually affects young adults and destroys CNS myelin sheaths. What is this disease?
2. Neurons are functionally connected by _____, junctions that mediate information transfer
3. _____ neuron- neuron conducting impulses toward synapse (sends information)
4. _____ neuron- neuron transmitting electrical signal away from synapse (receives information)
 - a. In the PNS, this could be a neuron, _____ cell, or _____ cell
5. What are the 2 types of synapses?
6. Which synapse is most common, is typically composed of 2 parts, and becomes a chemical across the synapse
 - a. What are the 2 parts of this synapse
7. Which synapse is least common, where neurons are electrically coupled and are joined by gap junctions that connect the cytoplasm
8. Graded potentials vary in strength based on what 2 things?
 - a. _____ of neurotransmitter

b. _____ neurotransmitter stays in the cleft

9. What are the 2 types of postsynaptic potentials

a. _____ (_____-) open

chemically gated Na^+ channels causing a depolarization, allowing AP to occur

b. _____ (_____-) open

chemically gated channels to allowed entrance/exit of ions to cause

hyperpolarization

i. This makes neuron MORE/LESS negative

10. T/F A single EPSP cannot induce an AP, but EPSPs can summate (add together) to

influence postsynaptic neuron

11. T/F IPSPs can also summate, but move the neuron further from threshold

12. What are the 2 types of summations

a. _____ - one or more presynaptic neurons transmit

impulses in rapid-fire order

b. _____ - postsynaptic neuron is stimulated by large number

of terminals simultaneously

13. How are neurotransmitters classified?

14. There are 2 broad ways to classify neurotransmitters according to function

a. Effects

i. _____ - causes depolarization

ii. _____ - causes hyperpolarization

b. Actions

i. _____ - bind to and open ion channels

ii. _____ - act through intracellular second messenger

molecules (binding doesn't result in immediate response)

CNS

1. Match with the correct definition!

- | | |
|-----------------|---|
| a. Nerve | 1. fluid-filled chambers that are continuous to one another |
| b. Tract | 2. myelinated and nonmyelinated axons |
| c. Ganglion | 3. a bundle of axons/ dendrites outside the CNS |
| d. Nucleus | 4. a bundle of axons/ dendrites inside the CNS |
| e. Gray matter | 5. short, nonmyelinated neurons and cell bodies |
| f. White matter | 6. collection of perikaryons and dendrites inside the CNS |
| g. Ventricles | 7. collection of perikaryons and dendrites outside CNS |

2. T/F The cerebral hemispheres account for 83% of brain mass

3. What are the surface markings on the cerebrum

- a. _____ - ridges
- b. _____ - shallow grooves
- c. _____ - deep grooves

4. What are the basic regions of each hemisphere

- a. Superficial _____ matter
- b. Internal _____ matter
- c. _____ within white matter

5. What is the executive suite of the brain

6. What is the site of the conscious mind, awareness, sensory perception, voluntary motor initiation, communication, memory storage, and understanding?

7. What are the 3 functional areas of the cerebral cortex?

- a. _____ areas- control voluntary movement
- b. _____ areas- conscious awareness of sensation
- c. _____ areas- integrate diverse information

8. Each hemisphere is _____ or is concerned with opposite side of the brain

9. What is the division of labor between hemispheres?