

Unit : 3A— Neural Processing & the Endocrine System

Pg. #s 51-63

Vocab on pg. 64

(or throughout chapter in bold)

Reading-As-You-Go Questions

Due date:

By 10/12—A Day

10/13— B Day

1. What do **biological psychologists** investigate and why is their work important to psychology? (pg. 52)

2. Define the following terms and explain how they help a neuron function. (pg. 52-55)

Sensory neurons→

Motor neurons→

Interneurons →

Dendrites→

Threshold→

Action potential→

Axon→

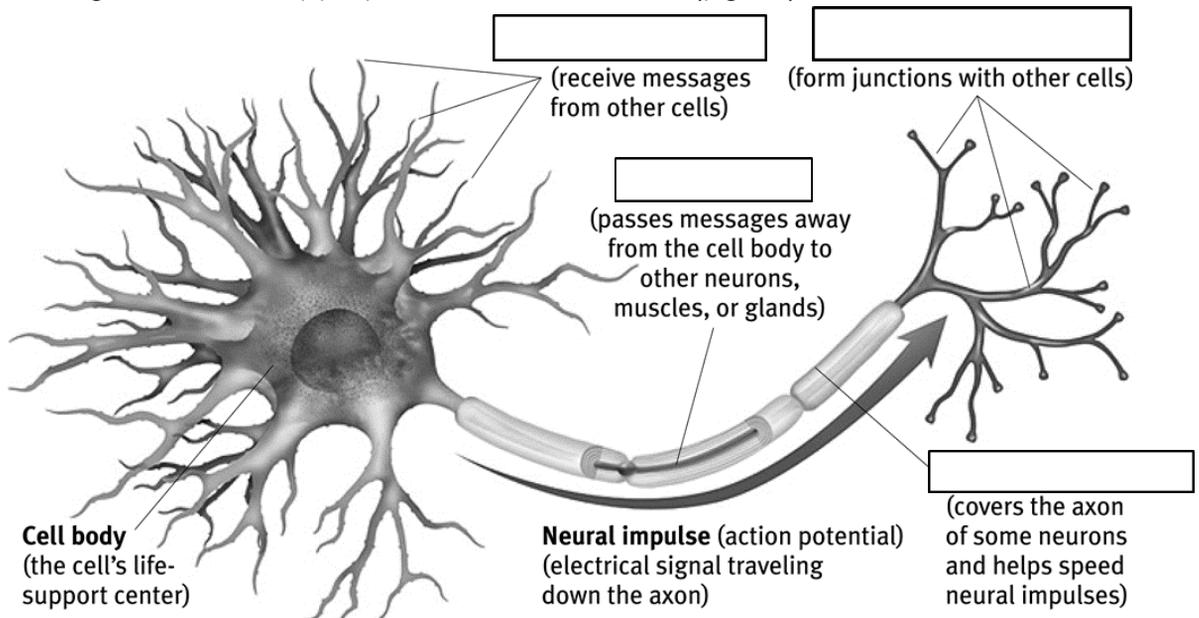
Myelin sheath→

Synapse→

Neurotransmitters→

Reuptake→

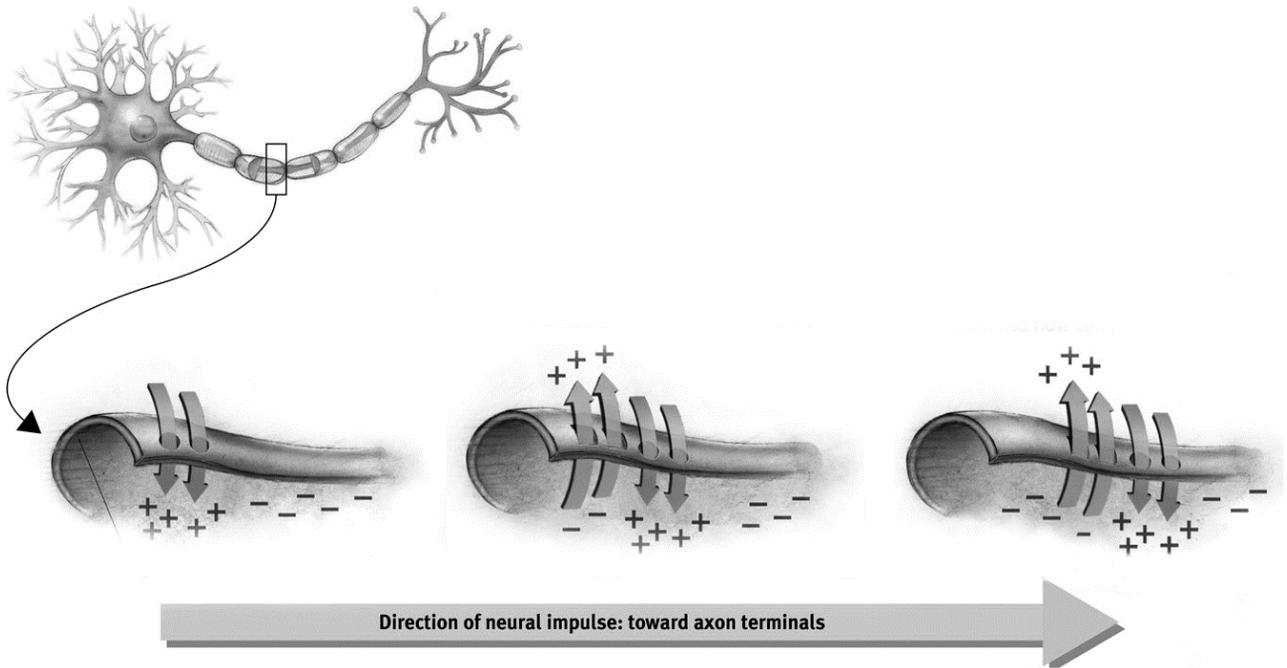
3. Label the diagram with the appropriate term from above: (pg. 53)



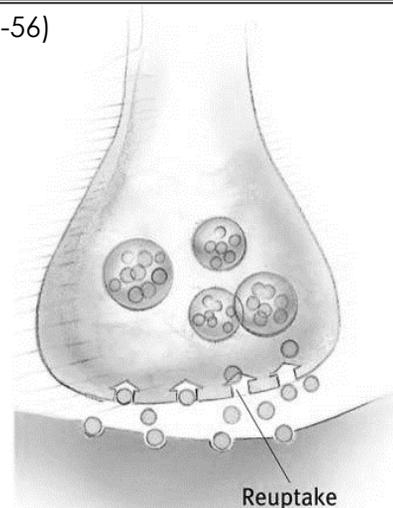
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4. Explain depolarization, polarization, re-polarization, and absolute refractory period, utilizing the diagram below. (pg. 54-55)



5. Explain the process of reuptake, using the diagram as a guide. (pg. 55-56)



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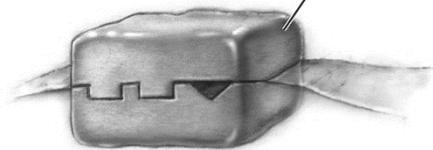
6. Review the following chart for **neurotransmitters** and their functions/malfunctions. Fill in the blanks as needed with info from your reading and class notes. (pg. 57)

SOME NEUROTRANSMITTERS AND THEIR FUNCTIONS

Neurotransmitter	Function	Examples of Malfunctions
Acetylcholine (ACh)	Enables muscle action, learning, and memory.	<input type="text"/> disease, ACh-producing neurons deteriorate.
Dopamine	Influences movement, learning, attention, and emotion.	Excess dopamine receptor activity linked to <input type="text"/> Starved of dopamine, the brain produces the tremors and decreased mobility of <input type="text"/>
Serotonin	Affects mood, hunger, sleep, and arousal.	Undersupply linked to <input type="text"/> Prozac and some other antidepressant drugs raise serotonin levels.
Norepinephrine	<input type="text"/>	Undersupply can depress mood.
GABA (gamma-aminobutyric acid)	A major <input type="text"/> neurotransmitter.	Undersupply linked to seizures, tremors, and insomnia.
Glutamate	A major <input type="text"/> neurotransmitter; involved in memory.	Oversupply can overstimulate brain, producing migraines or seizures (which is why some people avoid MSG, monosodium glutamate, in food).

7. Explain how **agonist** work, referencing the relationship between endorphins, morphine and heroin. Then explain how **antagonists** work, referencing the relationship between acetylcholine and Curare. Use the diagrams to help. (57-58)

Agonist mimics neurotransmitter



This agonist molecule excites. It is similar enough in structure to the neurotransmitter molecule that it mimics its effects on the receiving neuron. Morphine, for instance, mimics the action of endorphins by stimulating receptors in brain areas involved in mood and pain sensations.

Neurotransmitter molecule

Receiving cell membrane



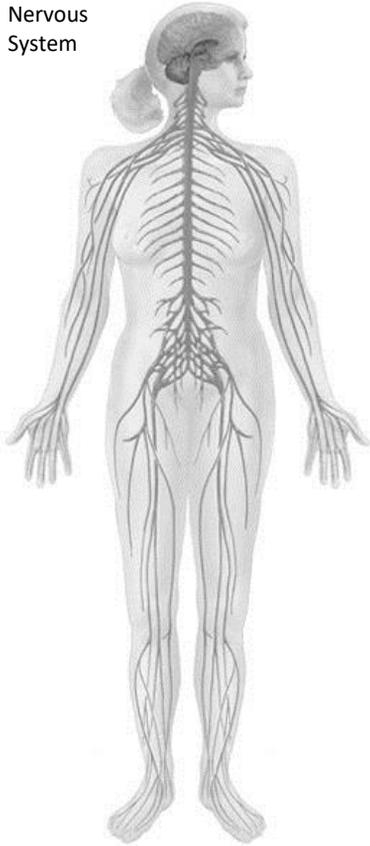
Receptor site on receiving neuron

This neurotransmitter molecule has a molecular structure that precisely fits the receptor site on the receiving neuron, much as a key fits a lock.

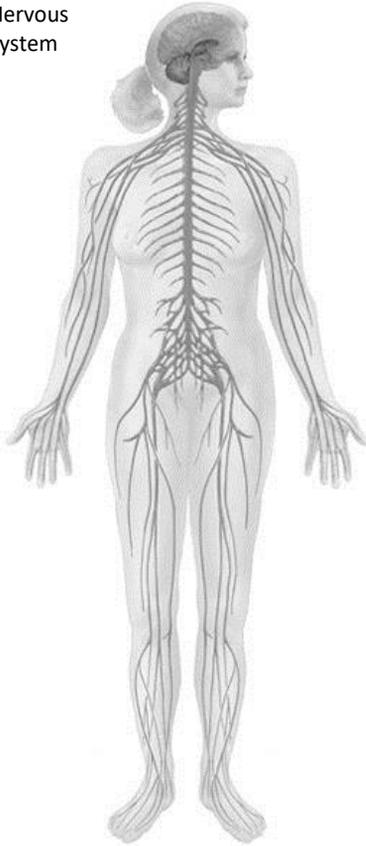
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7. Trace the location of the **central nervous system** and the **peripheral nervous system** on the diagrams below. (pg. 59)

Central
Nervous
System



Peripheral
Nervous
System



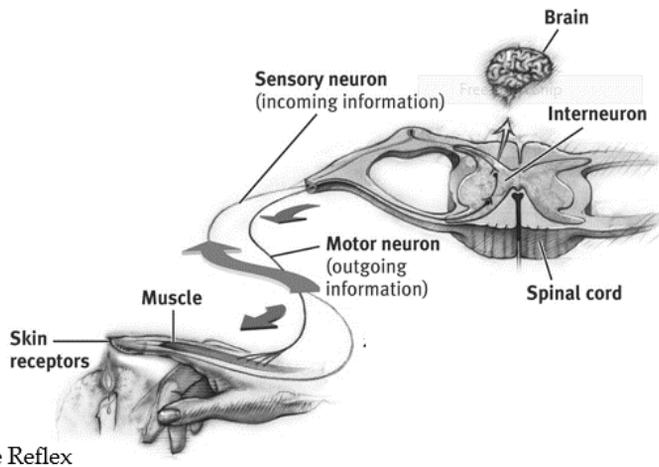
8. Explain the difference between the **autonomic** and **somatic nervous system**. (pg. 59)

9. Explain the function and purpose of the **sympathetic** and **parasympathetic nervous systems**. (59-60) (discuss opposing body functions in your answer)

10. Explain how **neural networks** work, using an example. (60)

11. Explain how a simple reflex works, including reference to **sensory neurons (afferent neurons)**, **interneurons**, and **motor neurons (efferent neurons)**. (pg. 62).

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Simple Reflex

12. Explain the difference between **unipolar**, **bipolar** and **multipolar** neurons (from notes of look this up)**

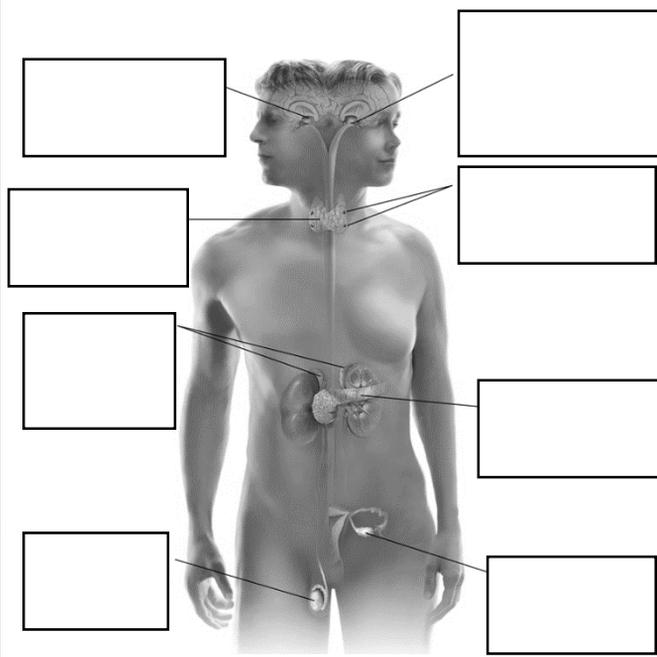
14. Explain in depth how each of the following function within the endocrine system: (pg. 62-63)

Hormones →

Adrenal glands (epinephrine and noradrenaline) →

Pituitary gland →

13. Label the Endocrine System below: (pg. 63)



15. Explain the feedback system between the nervous and endocrine systems: (copy flow chart of bottom of pg. 63 and explain) pg. 63