

**SECTION 35-1 REVIEW**

# **HUMAN BODY SYSTEMS**

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**VOCABULARY REVIEW**    Define the following terms.

1. **specialized cell** \_\_\_\_\_  
\_\_\_\_\_
2. **feedback inhibition** \_\_\_\_\_  
\_\_\_\_\_
3. **homeostasis** \_\_\_\_\_  
\_\_\_\_\_
4. **nervous tissue** \_\_\_\_\_  
\_\_\_\_\_
5. **connective tissue** \_\_\_\_\_  
\_\_\_\_\_

**MULTIPLE CHOICE**    Write the correct letter in the blank.

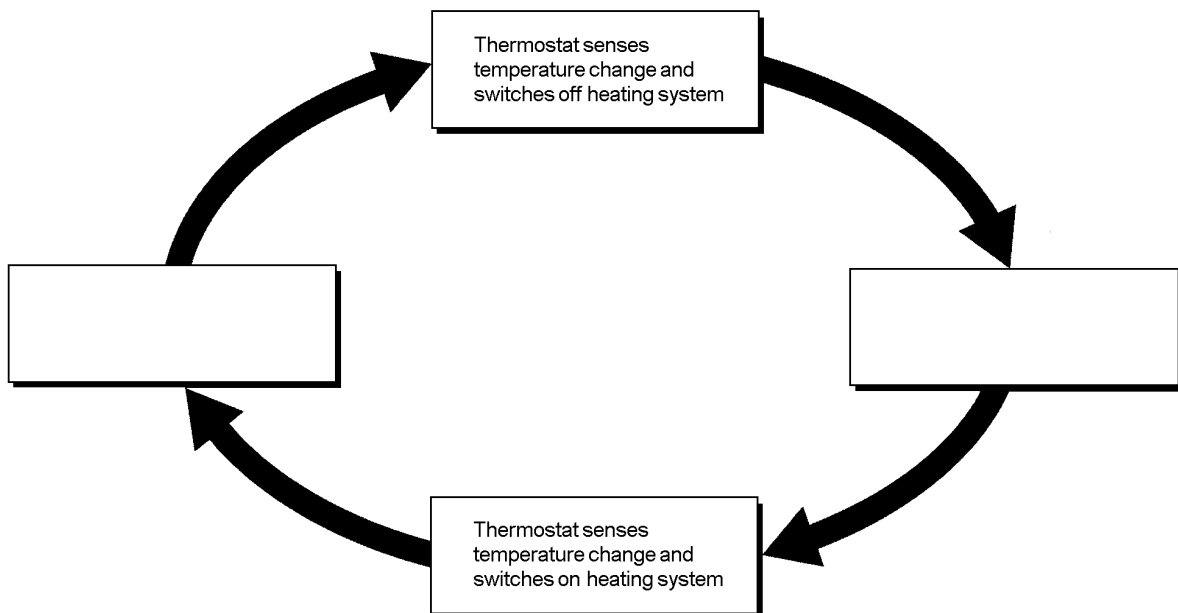
- \_\_\_\_\_ 1. The tissue that binds, supports, and protects structures is called
  - a. connective tissue.
  - b. muscle tissue.
  - c. nervous tissue.
  - d. epithelial tissue.
- \_\_\_\_\_ 2. Organ systems consist of
  - a. tissues.
  - b. cells
  - c. organs
  - d. All of the above.
- \_\_\_\_\_ 3. The tissue that covers the interior and exterior body surfaces is called
  - a. connective tissue.
  - b. muscle tissue.
  - c. nervous tissue.
  - d. epithelial tissue.
- \_\_\_\_\_ 4. Which organ system includes the kidneys, ureters, bladder, urethra, lungs, and skin?
  - a. integumentary system
  - b. digestive system
  - c. excretory system
  - d. endocrine system
- \_\_\_\_\_ 5. The levels of organization in the body include
  - a. endocrine, respiratory, and nervous.
  - b. organelles, nucleus, and mitochondria.
  - c. cells, tissues, organs, and organ systems.
  - d. lymphatic, reproductive, and muscular.

**SHORT ANSWER** Answer the questions in the space provided.

1. What are the four types of tissues found in the human body? (p.894) \_\_\_\_\_  
\_\_\_\_\_
2. Match the organ system with its function. (pp.892-893)

Organ System	Function
_____ 1. nervous system	a. stores minerals and produces blood cells
_____ 2. skeletal system	b. provides oxygen and removes carbon dioxide
_____ 3. integumentary system	c. controls most functions in the body
_____ 4. endocrine system	d. provides movement of body, blood, and food
_____ 5. lymphatic/immune system	e. controls body processes with many different hormones
_____ 6. muscular system	f. eliminates metabolic waste like urea
_____ 7. reproductive system	g. serves as a barrier against infection and injury
_____ 8. respiratory system	h. converts food so it can be used by cells
_____ 9. excretory system	I. uses white blood cells to fight off diseases
_____ 10. circulatory system	j. produces eggs and sperm
_____ 11. digestive system	k. consists of blood, cells, nutrients, and waste products.

**STRUCTURES AND FUNCTIONS** Fill in the missing labels in the diagram to show how a thermostat uses feedback inhibition to maintain a stable temperature in a house. Use these terms to label the diagram: “House cools down below the thermostats set point”, or “House heats up to the set point of the room thermostat”. (p.895)



**SECTION 35-2 REVIEW**

## **THE NERVOUS SYSTEM**

**VOCABULARY REVIEW** Explain the relationship between the terms in each of the following groups of terms.

1. **neuron, dendrite, axon** \_\_\_\_\_  
\_\_\_\_\_
2. **resting potential, action potential** \_\_\_\_\_  
\_\_\_\_\_
3. **neurotransmitter, synapse** \_\_\_\_\_  
\_\_\_\_\_
4. **motor neuron, efferent neuron, interneuron** \_\_\_\_\_  
\_\_\_\_\_

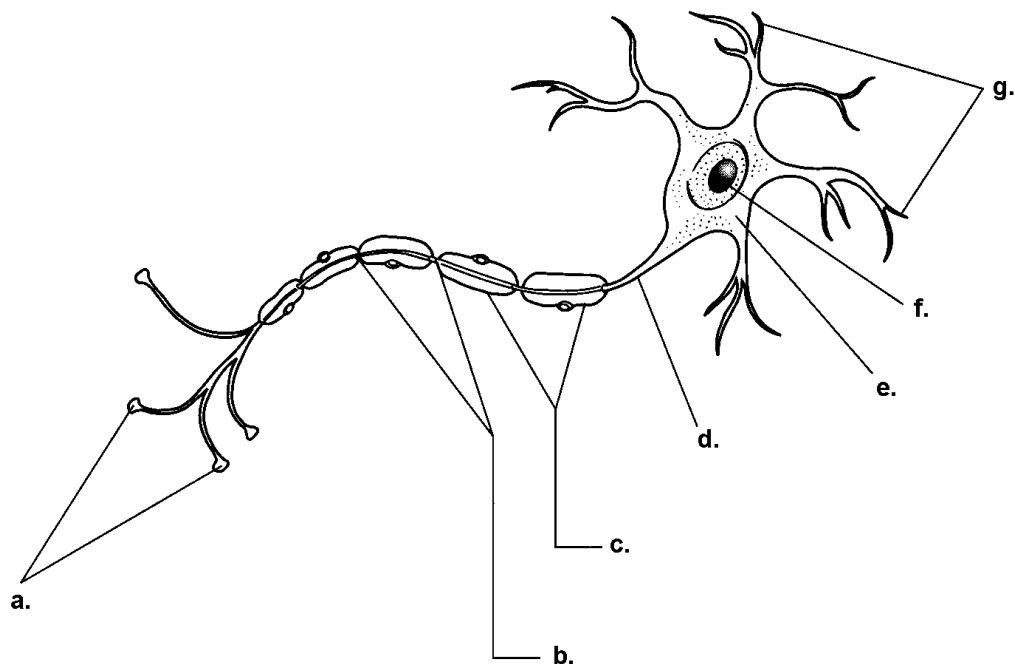
**MULTIPLE CHOICE** Write the correct letter in the blank.

- \_\_\_\_\_ 1. Myelin sheaths surround
  - a. dendrites.
  - b. the spinal cord.
  - c. axons.
  - d. synapses.
- \_\_\_\_\_ 2. The initiation of an action potential
  - a. causes the inside of the membrane to become more negative.
  - b. requires sodium ions move into the neuron.
  - c. originates in fat-like cells.
  - d. happens at axon terminals.
- \_\_\_\_\_ 3. A typical neuron has more than one
  - a. nucleus.
  - b. axon.
  - c. dendrite.
  - d. All of the above.
- \_\_\_\_\_ 4. Action potentials require
  - a. sodium ions.
  - b. gated channels.
  - c. diffusion.
  - d. All of the above.
- \_\_\_\_\_ 5. In a neuron, neurotransmitters are stored in
  - a. the cell body.
  - b. the cytoplasm of the nucleus.
  - c. vesicles within dendrites.
  - d. vesicles within axon terminals.
- \_\_\_\_\_ 6. What is the smallest structural and functional unit of the nervous system?
  - a. neuron
  - b. receptor
  - c. organ
  - d. tissue

**SHORT ANSWER** Answer the questions in the space provided.

1. Describe how a neurotransmitter can affect the activity of another neuron. (p.900) \_\_\_\_\_  
 \_\_\_\_\_
2. Describe the relative concentrations of sodium and potassium ions inside and outside a neuron at resting potential. (p.898) \_\_\_\_\_  
 \_\_\_\_\_
3. Explain why action potentials move through axons in only one direction: away from the cell body, toward the axon terminal. (p.900) \_\_\_\_\_  
 \_\_\_\_\_
4. In myelinated axons, ions can cross the cell membrane only at the nodes. What affect does myelination have on the speed of an action potential? (p.898) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**STRUCTURES AND FUNCTIONS** Label the diagram of a typical neuron . Use the following terms: dendrites, myelin sheath, nodes, axon, axon terminals, cell body, and nucleus. (p.897)



**SECTION 35-3 REVIEW**

## **DIVISIONS OF THE NERVOUS SYSTEM**

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**VOCABULARY REVIEW**    Define the following terms.

1. **meninges** \_\_\_\_\_  
\_\_\_\_\_
2. **cerebrospinal fluid** \_\_\_\_\_  
\_\_\_\_\_
3. **hypothalamus** \_\_\_\_\_  
\_\_\_\_\_
4. **brain stem** \_\_\_\_\_  
\_\_\_\_\_
5. **reflex arc** \_\_\_\_\_  
\_\_\_\_\_

**MULTIPLE CHOICE**    Write the correct letter in the blank.

- \_\_\_\_\_ 1. The central nervous system consists of the
  - a. sense organs.
  - b. brain and spinal cord.
  - c. reflexes.
  - d. sensory and motor neurons.
- \_\_\_\_\_ 2. A reflex arc requires
  - a. the spinal cord to be separated from the brain.
  - b. a sensory neuron and a motor neuron.
  - c. involvement of the hypothalamus.
  - d. only sensory neurons.
- \_\_\_\_\_ 3. The sympathetic nervous system and the parasympathetic nervous system are divisions of the
  - a. cerebral cortex.
  - b. somatic nervous system.
  - c. central nervous system.
  - d. autonomic nervous system.
- \_\_\_\_\_ 4. The somatic nervous system
  - a. is a component of the sensory nervous system.
  - b. primarily affects skeletal muscles.
  - c. primarily affects the heart muscles.
  - d. primarily affects smooth muscles.
- \_\_\_\_\_ 5. Which of the following is a function of the cerebrum?
  - a. control conscious activities of the body
  - b. control blood pressure
  - c. control heart rate
  - d. control breathing

**SHORT ANSWER** Answer the questions in the space provided.

1. What is the function of each of the main regions of the brain? (cerebrum, cerebellum, thalamus, hypothalamus, and brain stem) (pp.902-903)\_\_\_\_\_

\_\_\_\_\_

2. What are the four major lobes of the brain? (p.902)\_\_\_\_\_

\_\_\_\_\_

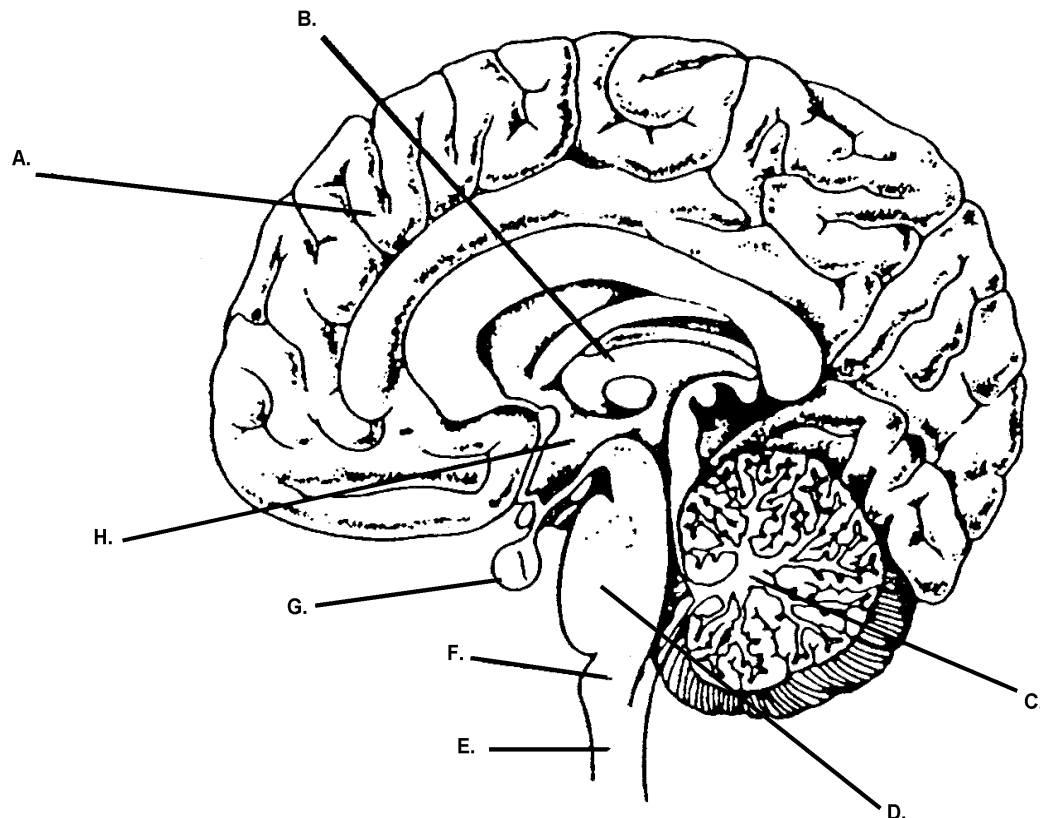
3. How are the meninges and cerebrospinal fluid related? (p.901)\_\_\_\_\_

\_\_\_\_\_

4. How are the somatic nervous system and autonomic nervous system different? (p.904)\_\_\_\_\_

\_\_\_\_\_

**STRUCTURES AND FUNCTIONS** In the diagram below, label the areas of the human brain. Use the following terms: spinal cord, pons, medulla oblongata, cerebrum, cerebellum, pituitary gland, hypothalamus, and thalamus. (p.901)



## SECTION 35-4 REVIEW

# THE SENSES

**VOCABULARY REVIEW** Explain the relationship between the terms in each of the following pairs of terms.

1. **sensory receptor, taste bud** \_\_\_\_\_  
\_\_\_\_\_
2. **pupil, lens** \_\_\_\_\_  
\_\_\_\_\_
3. **rod, cone** \_\_\_\_\_  
\_\_\_\_\_
4. **cochlea, semicircular canal** \_\_\_\_\_  
\_\_\_\_\_

**MULTIPLE CHOICE** Write the correct letter in the blank.

- \_\_\_\_\_ 1. Which of the following statements is *false*?
 

a. Rods and cones are specialized neurons.	c. Rods work best for seeing color.
b. Cones are concentrated in the fovea.	d. Rods and cones are photoreceptors.
- \_\_\_\_\_ 2. The perception of taste
 

a. depends on sensory receptors in the brain.	c. does not involve the thalamus.
b. is based on chemoreceptors on the tongue.	d. is a function of the digestive system.
- \_\_\_\_\_ 3. The semicircular canals and the two tiny sacs located behind them help maintain
 

a. night vision.	c. equilibrium.
b. respiratory rate.	d. body temperature.
- \_\_\_\_\_ 4. Bones of the middle ear
 

a. vibrate the tympanic membrane.	c. transfer sound vibrations to the inner ear.
b. contain hair cells.	d. All of the above.
- \_\_\_\_\_ 5. Which general category of sensory receptors detect variations in temperature?
 

a. thermoreceptors	b. mechanoreceptors	c. photoreceptors	d. chemoreceptors
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- \_\_\_\_\_ 6. What part of your eyes uses small muscles to change its shape to help you focus on near or far objects?
 

a. retina	b. lens	c. cornea	d. pupil
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**SHORT ANSWER Answer the questions in the space provided.**

1. How do the semicircular canals detect motion? (pp.908-909)\_\_\_\_\_
2. What is the first event that is required for the detection of sound? (p.908)\_\_\_\_\_
3. Describe the pathway that light travels from the front of the eye to the back of the eye. Name all of the structures, in correct order, as a beam of light passes through each of them. (pp.906-907)\_\_\_\_\_
4. What is the largest sense organ in the human body? (p.909)\_\_\_\_\_
5. List the four different categories of tastes. (p.909)\_\_\_\_\_
6. Complete the sentences about the process of hearing. Use the following choices: cochlea, cochlear nerve, oval window, auditory canal, stirrup, hammer, anvil, and tympanum. (p.908)
  1. Vibrations enter the ear through the \_\_\_\_\_ .
  2. The vibrations cause the \_\_\_\_\_ to vibrate.
  3. These vibrations are picked up by three tiny bones called the \_\_\_\_\_ , \_\_\_\_\_ and \_\_\_\_\_ .
  4. The last bone transmits the vibrations to the \_\_\_\_\_ creating pressure waves in the \_\_\_\_\_ .
  5. Tiny hair cells inside the \_\_\_\_\_ produce nerve impulses that are sent to the brain through the \_\_\_\_\_ .

**STRUCTURES AND FUNCTIONS** In the table below, write the type of sensory receptor-mechanoreceptor, photoreceptor, thermoreceptor, or chemoreceptor - that is associated with each sensory system. There may be more than one answer for each system. (pp.906-909)

Sensory System	Receptor Type
Vision	1.
Balance	2.
Hearing	3.
Smell	4.
Touch	5.
Temperature	6.
Taste	7.



## SECTION 35-5 REVIEW

# DRUGS AND THE NERVOUS SYSTEM

### VOCABULARY REVIEW    Define the following terms.

1. **drug** \_\_\_\_\_  
\_\_\_\_\_
2. **stimulant** \_\_\_\_\_  
\_\_\_\_\_
3. **depressant** \_\_\_\_\_  
\_\_\_\_\_
4. **fetal alcohol syndrome** \_\_\_\_\_  
\_\_\_\_\_
5. **addiction** \_\_\_\_\_  
\_\_\_\_\_

### MULTIPLE CHOICE    Write the correct letter in the blank.

- \_\_\_\_\_ 1. Drugs that increase the heart rate, blood pressure, and breathing rate are  
 a. stimulants.                      b. opiates.                      c. depressants.                      d. barbiturates.
- \_\_\_\_\_ 2. Alcohol does each of the following except  
 a. slows reflexes.                      c. impairs judgement.  
 b. stimulates heart rate.                      d. disrupts coordination.
- \_\_\_\_\_ 3. What types of drugs slows down the activity of the central nervous system?  
 a. stimulants                      b. depressants                      c. opiates                      d. cocaine
- \_\_\_\_\_ 4. A group of birth defects caused by the effects of alcohol on an unborn child is called  
 a. fetal alcohol syndrome.                      c. drug addition syndrome.  
 b. Down syndrome.                      d. Turner's syndrome.
- \_\_\_\_\_ 5. (A)n \_\_\_\_\_ is an uncontrollable dependence on a drug.  
 a. habit                      b. obsession                      c. addiction                      d. None of these.
- \_\_\_\_\_ 6. Which of the following drugs is a depressant?  
 a. alcohol                      b. morphine                      c. tranquilizer                      d. barbiturate

**SHORT ANSWER Answer the questions in the space provided.**

1. Match the drug or type of drug with one way that it can affect the body. (pp.910-913)

- |                     |                                      |
|---------------------|--------------------------------------|
| _____ 1. stimulant  | a. acts on pleasure centers of brain |
| _____ 2. depressant | b. destroys liver cells              |
| _____ 3. cocaine    | c. reduces pain                      |
| _____ 4. opiate     | d. decreases heart rate              |
| _____ 5. marijuana  | e. increases blood pressure          |
| _____ 6. alcohol    | f. causes lung damage                |

2. Explain why a pregnant woman should avoid drinking alcohol. (p.913) \_\_\_\_\_

\_\_\_\_\_

3. Define drug abuse in your own words. (p.914) \_\_\_\_\_

\_\_\_\_\_

4. How does long term alcohol abuse affect the body? (p.913) \_\_\_\_\_

\_\_\_\_\_

5. How can drug use increase transmission of HIV, the virus that causes AIDS? (p.914) \_\_\_\_\_

\_\_\_\_\_

6. How can drugs disrupt the functioning of the nervous system? (p.910) \_\_\_\_\_

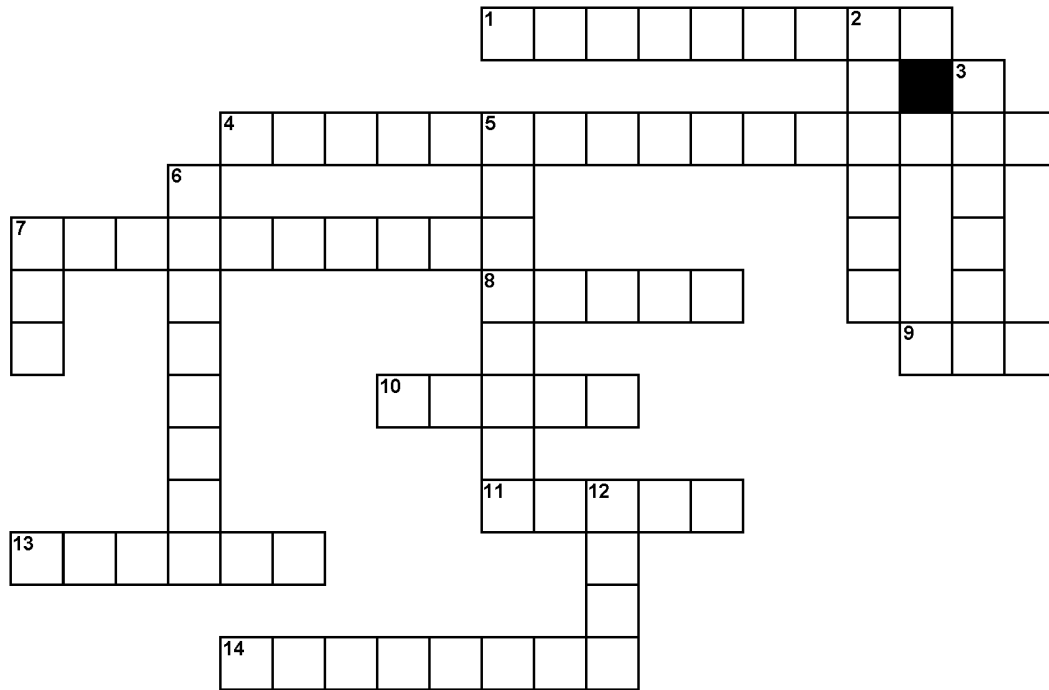
\_\_\_\_\_

**STRUCTURES AND FUNCTIONS** The following table describes how four different drugs - opiates, marijuana, cocaine, and alcohol - affect the human body. Complete the table by filling in the correct drug. (pp.911-912)

Drug	Effect on the Body
	slows the rate at which the central nervous system functions; slows reflexes; disrupts coordination; impairs judgement; destroys liver cells
	causes the sudden release of a neurotransmitter called dopamine; increases heart rate and blood pressure
	mimics endorphins, which are chemicals that normally help overcome pain; very addictive and results in the uncontrollable pain and withdrawal sickness
	active ingredient, THC, causes a temporary feeling of euphoria and disorientation; long term use can result in memory loss

## VOCABULARY - CHAPTER 35

The crossword puzzle is a simple way to master some of the more important vocabulary terms in this chapter.



### Across

1. the lobe of the cerebrum where vision is perceived
4. chemical that crosses the gap between neurons
7. the portion of the brain that coordinates muscle movements
8. the \_\_\_\_\_ of the eye is not really a physical structure but merely an opening to allow light into the eye
9. the cranial and spinal nerves make up the \_\_\_\_\_
10. sensory cells in the retina used to perceive different colors in bright light
11. the organ of \_\_\_\_\_ is found in the cochlea and is the site where pressure waves are converted to action potentials
13. an involuntary reaction that involves a sensory neuron and a motor neuron
14. a relay center for sensory information

### Down

2. an \_\_\_\_\_ potential is a nerve impulse created as sodium and potassium ions flow in and out of the neuron
3. nerve cell
5. the \_\_\_\_\_ membrane is the ear drum
6. outer region of the cerebrum made of gray matter is known as the \_\_\_\_\_ cortex
7. the brain and spinal cord together make up the \_\_\_\_\_
12. sensory cells in the retina used to perceive dim light

The following terms are **not** found in this chapter but are used in this puzzle. Use a reference source of some type and look up their meanings to complete this puzzle: **occipital, CNS, Corti, thalamus, tympanic, and PNS.**