Name: _____ Class: _____ Date: _____

CONCEPT REVIEW 34

NEURONS AND THE NERVOUS SYSTEM

PAGES 202 TO 205

Complete this concept review handout and keep it as a record of what you have learned.

DEFINITIONS

- The nervous system _____

  _____

  It is composed of _____

  _____

- A neuron is _____

  _____

- "Stimulus" is _____

  _____

- A nerve impulse is _____

  _____

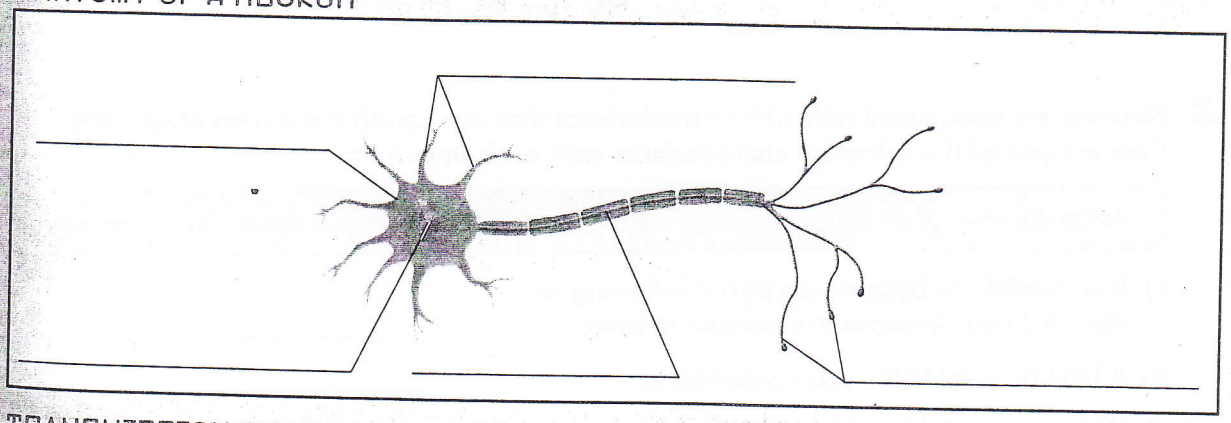
- A synapse is _____

  _____

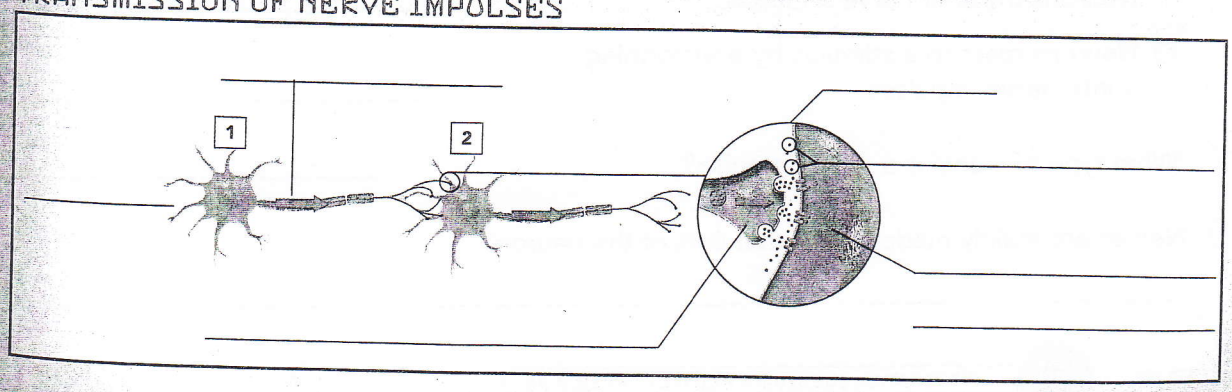
- A nerve is _____

  _____

ANATOMY OF A NEURON



TRANSMISSION OF NERVE IMPULSES



Name: _____ Class: _____ Date: _____

34 INTEGRATION QUESTIONS • NEURONS AND THE NERVOUS SYSTEM

1. What am I?

   a) I transmit and process information between the various parts of the body and the external world. _____

   b) I am a chemical substance through which nerve impulses travel from one neuron to another. _____

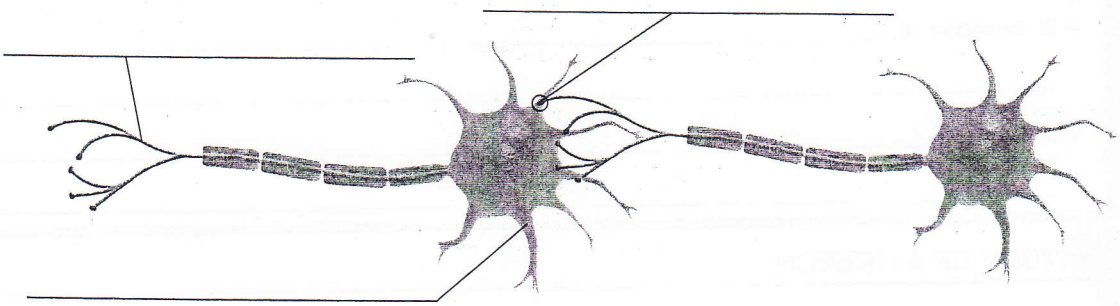
   c) I am the part of the neuron that that receives nerve impulses. _____

   d) I am the part of the neuron that encloses the nucleus. _____

   e) I am the transition zone between two neurons. _____

2. a) What direction do nerve impulses travel in neurons? Indicate the direction by drawing arrows on the illustration.

   b) Identify the structures indicated in this illustration that pass nerve impulses from one neuron to anther.



3. Neurons are specialized cells with characteristics that distinguish them from other cells. Connect one of the following characteristics with each statement.

   Is conductive | Can be stimulated | Cannot reproduce | Needs a great deal of energy

   a) It is possible to become paralyzed following an accident that damages the nervous system. _____

   b) A healthy meal helps you concentrate. _____

   c) Neurons transmit nerve impulses. _____

   d) Neurons react to a stimulus by transforming it into nerve impulses. _____

4. What type of signal is a nerve impulse? _____

5. Nerves are mainly made up of what part of the neuron?

   _____

Name: _____ Class: _____ Date: _____

CONCEPT REVIEW 35

THE PERIPHERAL NERVOUS SYSTEM

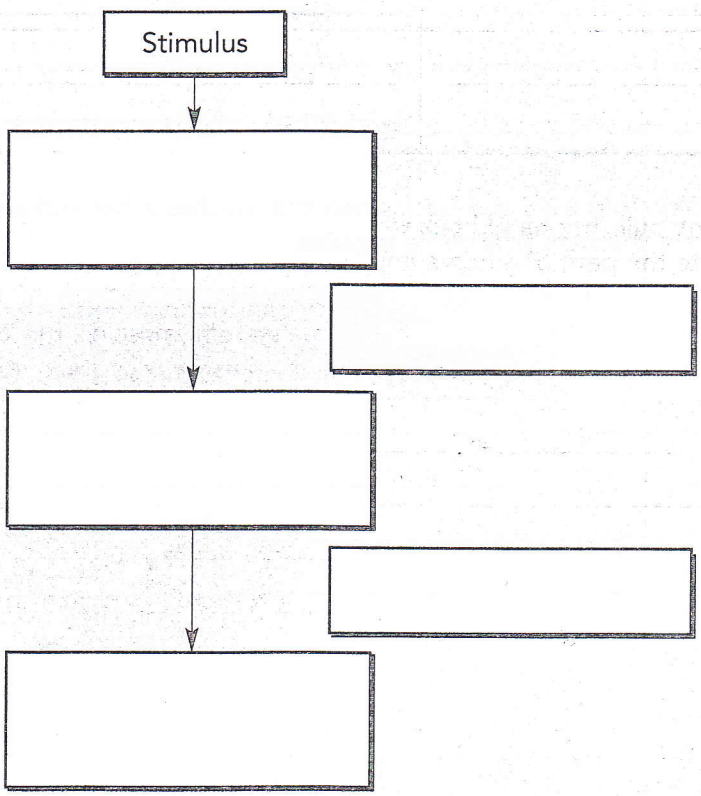
PAGES 205 AND 206

Complete this concept review handout and keep it as a record of what you have learned.

DEFINITIONS

- The peripheral nervous system _____
- A sensory receptor _____
- Sensory nerves _____
- Motor nerves _____

DISTRIBUTION OF INFORMATION THROUGHOUT THE BODY



Name: _____ Class: _____ Date: _____

35 INTEGRATION QUESTIONS • THE PERIPHERAL NERVOUS SYSTEM

1. What am I? Choose one of the following answers.

A. Sensory receptor
B. Sensory nerve
C. Motor nerve

a) I am a specialized cell that transforms stimuli into nerve impulses. _____

b) I transmit nerve impulses from different parts of the body to the central nervous system. _____

c) I transmit information picked up by sensory receptors. _____

d) I transmit information to produce stomach activity. _____

e) I transmit information from internal stimuli from many vital organs. _____

f) I transmit orders from the central nervous system to muscles. _____

g) I am a specialized nerve cell found throughout the body. _____

2. The nervous system is made up of mostly two types of nerves. Name them and indicate the direction they transmit nerve impulses.

Nerve	Direction of nerve impulses
_____	_____
_____	_____

3. Bassima pulls her hand back when she touches a hot surface. Using the following terms, indicate the path of a nerve impulse.

central nervous system, muscles, motor nerve, sensory nerve, sensory receptors, stimulus

_____

_____

_____

_____

Name: _____ Class: _____ Date: _____

CONCEPT REVIEW 36

THE CENTRAL NERVOUS SYSTEM

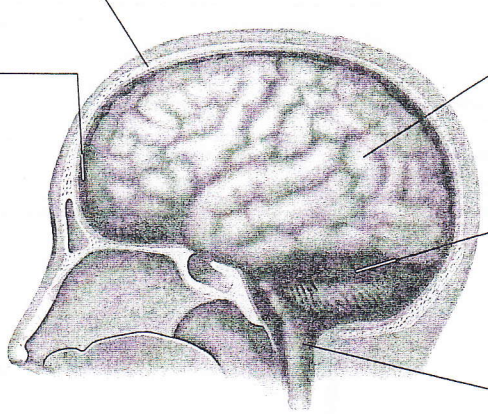
PAGES 206 to 212

Complete this concept review handout and keep it as a record of what you have learned.

DEFINITIONS

- The central nervous system coordinates _____
- The brain is _____
- The cerebrum is _____
- The cerebellum is _____
- The brain stem is _____
- The spinal cord is _____
- A reflex is _____
- A reflex arc is _____

ANATOMY OF THE BRAIN



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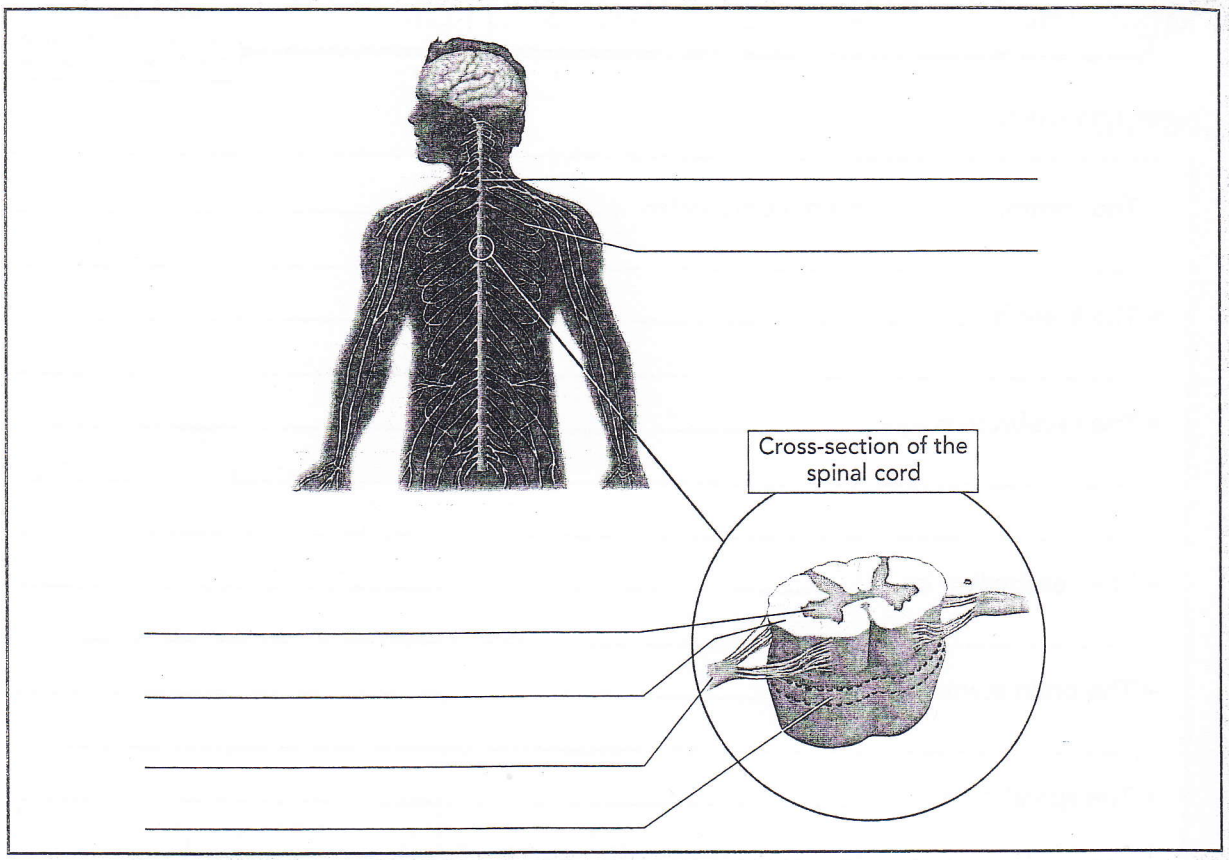
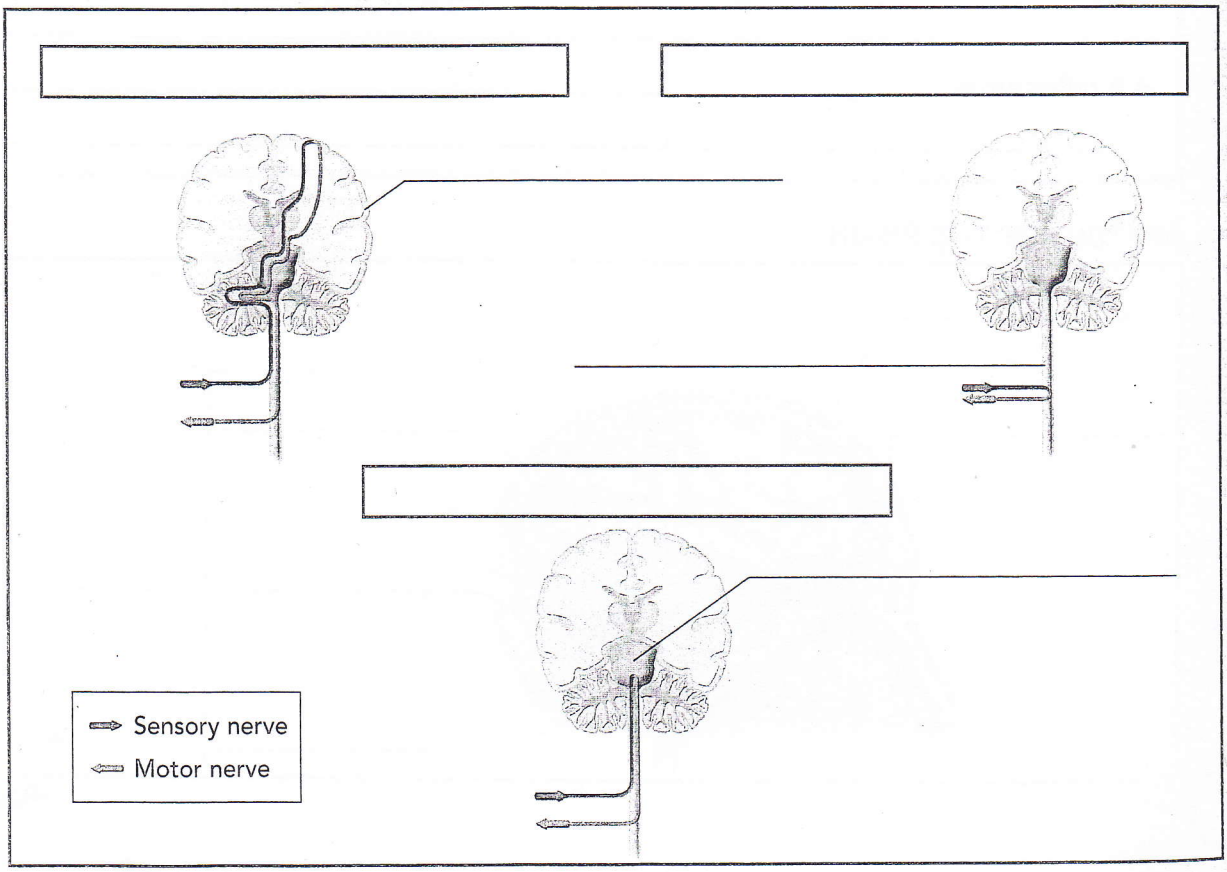
ANATOMY OF THE SPINAL CORD



THE PATH OF A NERVE IMPULSE



Name: _____ Class: _____ Date: _____

36 INTEGRATION QUESTIONS • THE CENTRAL NERVOUS SYSTEM

1. Connect each structure from the nervous system with its function(s).

Structure		Function
Cerebrum	◎	◎ Controls voluntary movement and interprets sensory information.
Cerebellum	◎	◎ Centre of emotions and intelligence.
Brain stem	◎	◎ Connects the various areas of the body with the brain.
Brain	◎	◎ Processes internal stimuli and involuntary movement.
Spinal cord	◎	◎ Centre of balance.
		◎ Communicates with the entire organism.

2. Indicate where the sensory nerve is sending the nerve impulse in each example below.

a) A voluntary movement. _____

b) A reflex. _____

c) An involuntary movement. _____

3. What are the nerves attached to the spinal cord called and what is their function?

_____

_____

4. How does the brain communicate with the rest of the body?

_____

5. Indicate whether the following examples represent voluntary movement, involuntary movement or reflexes.

a) During digestion the esophagus contracts to make food move down into the stomach. _____

b) When you ride a bike, your leg muscles work hard. _____

c) The heart must pump blood more rapidly during physical exertion. _____

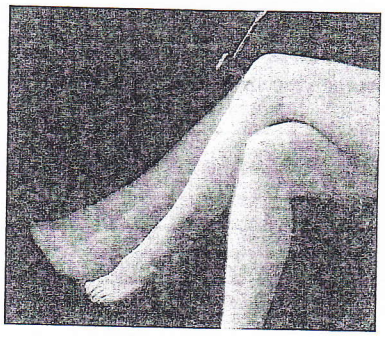
d) When we are blinded by a bright light, our eyelids close automatically. _____

Name: _____ Class: _____ Date: _____

6. The following photos and statements show examples of situations controlled by the nervous system. For each example, name the structure of the nervous system that is most likely in control.

a) _____

g) _____



b) _____

h) _____

c) Breathing harder during physical exertion. _____

d) Reciting a poem. _____

e) Pulling your hand back quickly when you touch a burning hot surface. _____

f) Blinking. _____

7. Lesions can result in all sorts of problems. What will determine the function (vision, touch, etc.) that will be affected? Explain your answer.

_____

_____

_____

8. When someone has a good idea, we sometimes say they've had a "brainwave." Is this term accurate? Explain your answer.

_____

_____

_____