

Name: _____

Nervous System
Chapter 41

1. The functions of the nervous system include

A. _____

B. _____

Examples: 1. _____

2. _____

3. _____

2. Component of nervous system

A. _____

B. _____

C. _____

D. _____

3. _____ are nerve cells (basic unit of the nervous system)

4. Structure of neuron

A. _____ finger-like projections that extend from the cell body.

They receive information from other cells

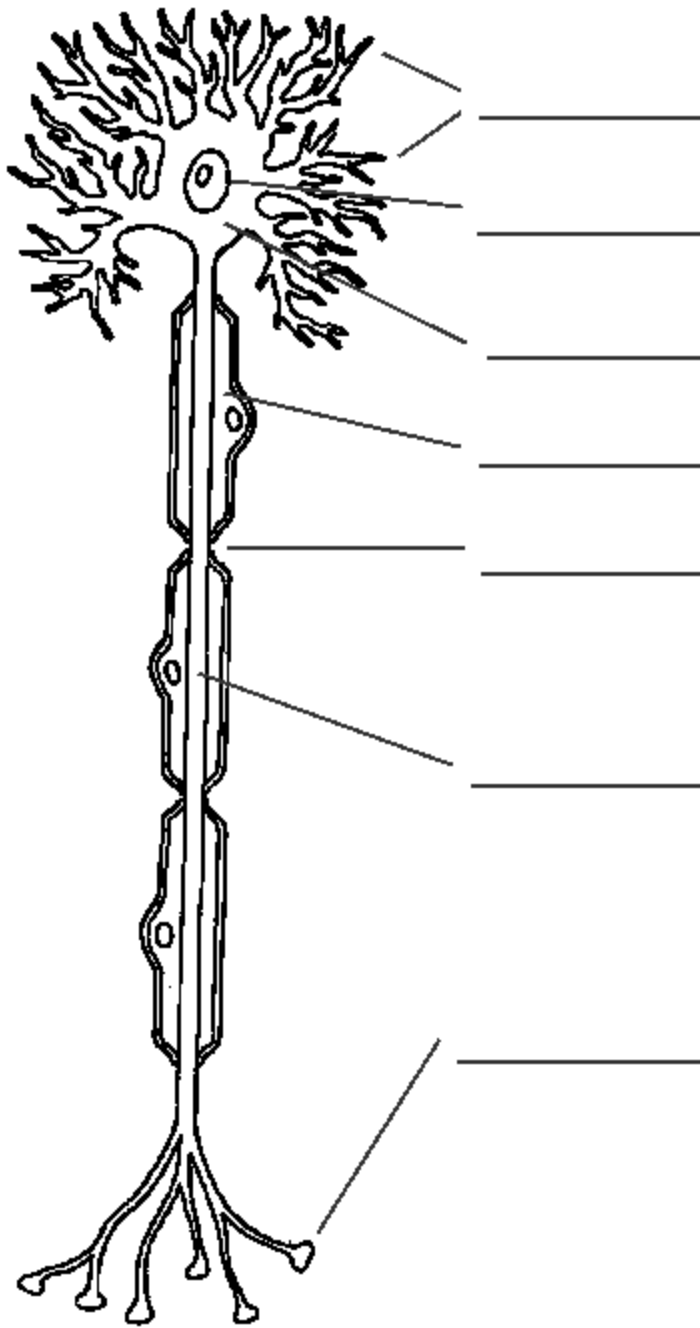
B. _____ main portion of the neuron. Contains a nucleus and other organelles. Relays the information from the dendrite to other parts of the neuron

C. _____ is a long membrane covered extension takes information from the cell body to the end of the axon

D. _____ end of the neuron. This is where impulses are sent to other parts of the cells

E. _____ a layer of insulation around the axon. It increases the speed of an impulse.

F. _____ areas of the axon where myelin is missing. Impulses jump from node to node. The axon is exposed to surrounding fluids at these areas.



5. Many axons bundled together are called _____

6. Speed of impulses are affected by 2 factors

A. _____

1. _____

B. _____

2. _____

Neuron Function

7. Impulses are sent due to a difference in charge between a cell and its environment. This called the _____.

8. Resting Potential

A. _____ of a cell at rest.

B. Usually _____.

1. _____ have a _____ charge. When a cell is at rest, _____ are closed meaning _____

2. _____ have a _____ charge. When a cell is at rest _____ are open meaning _____

9. Action potential

A. _____ when a neuron is sending an impulse

B. usually _____

1. _____ causes _____ channels to open causing _____ to enter the neuron

10. That area of the axon becoming positive cause _____ channels farther down the axon to _____ causing _____ ions to enter that part of the axon making it positive

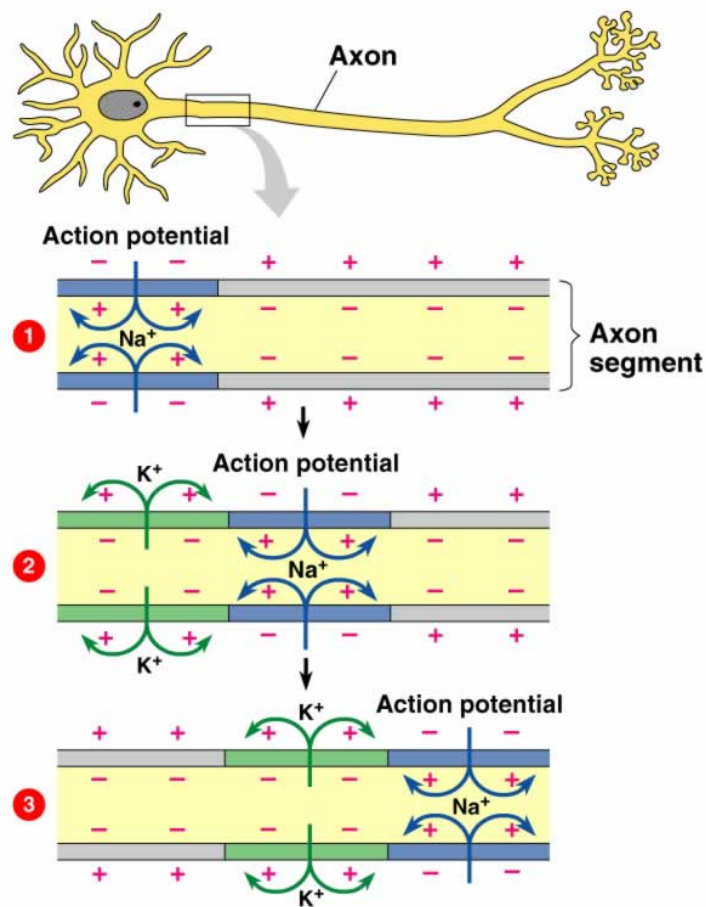
11. The process repeats until impulse is sent down the entire length of the _____.

12. After the impulse has passed the

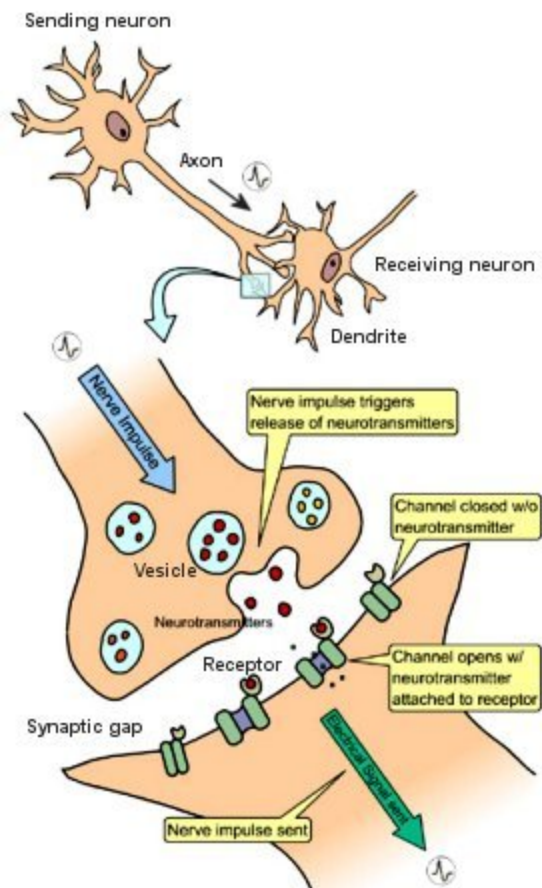
A. _____ channels close

B. _____ channels open

C. Charge returns to _____



13. Neurons don't touch. The gap between neurons are called _____
14. The cell that has the information is called the _____.
15. The cell that is receiving the neuron is called the _____.
16. When an impulse reaches the axon terminal, the axon terminal releases a protein called a _____ that travels to the next neuron.
17. Neurotransmitter either
1. _____
 2. _____



18. Types of neurotransmitters

- A. _____ stimulates muscle contractions
- B. _____ like dopamine and norepinephrine
plays a role in cognition and emotion (wrong levels = depression)
- C. _____ plays a role in sleep and appetite
- D. _____ reduces pain

SECTION 2:

19. Two main divisions of the nervous system

- A. _____
- B. _____

20 Central Nervous System is composed of

- A. _____
- B. _____

21 Surrounding both the brain and spinal cord is a layer of tissues called the

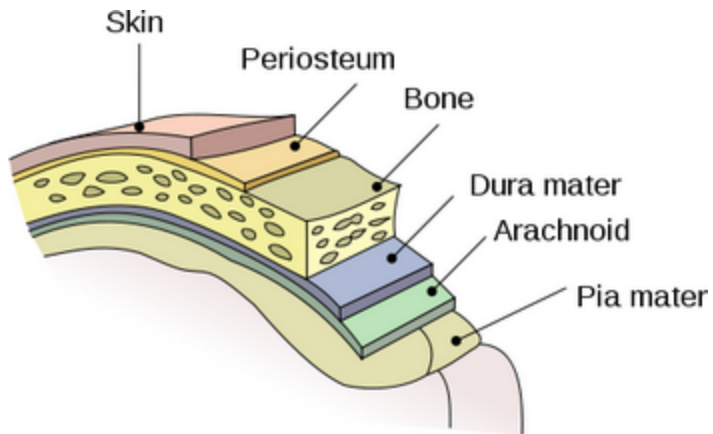
_____.

22. Layers of meninges

- 1. _____ innermost layer, lies next to brain and spinal cord
contains many nerves and blood vessels
- 2. _____ middle layer. No blood vessels, has a spider web
like appearance
- 3. _____ outermost layer. Very tough, leathery structure.
Limits movement of the brain, prevents friction.

23 _____ is a fluid located between arachnoid layer and pia layer. Provides

- A. _____
- B. _____
- C. _____



24. Brain has 3 main portions

- A. _____
- B. _____
- C. _____

25. Cerebrum is

- A. _____
- B. _____
- C. _____
- D. _____

26. Corpus callosum

- A. _____
- B. _____

27. Left Hemisphere

A. _____

B. _____

28. Right Hemisphere

A. _____

B. _____

29. Cerebral Cortex

A. _____ layer (2-4 mm) of the cerebrum

B. Location of most _____ and
_____ processing

30. Parts of the cerebral cortex

A. _____

1. _____ portion of the cerebrum. Near the
_____.

2. _____ and _____
information from the environment

a. _____

b. _____

c. _____

B. Frontal Lobe

1. Located at the very _____ of the cerebrum

2. Responsible for

a. _____

b. _____

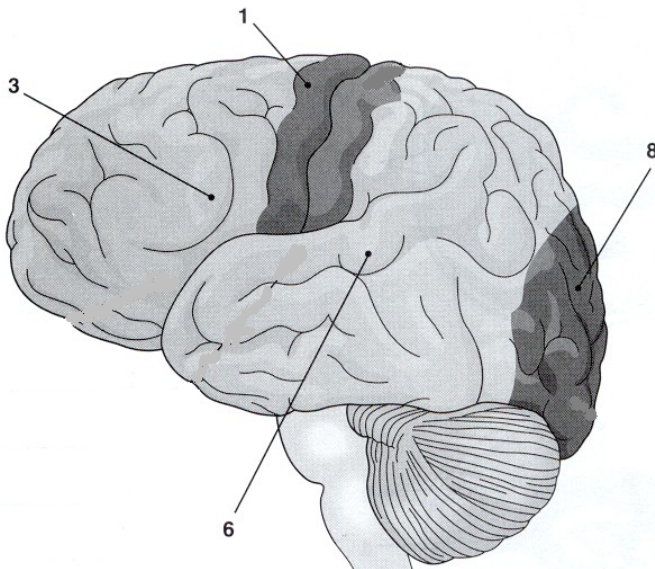
c. _____

C. Occipital Lobe

1. Located at the _____ of the cerebrum
2. Responsible for _____.

D. Temporal Lobe

1. Located at the _____ of the cerebrum (near the ears)
2. Responsible for _____.



31. Cerebellum

A. located below the _____

B. Responsible for

1. _____
2. _____
3. _____

32. Brain stem

- A. _____
- B. Responsible for _____ life functions
- C. _____ parts
 - 1. _____
 - a. _____ portion
 - 2. _____
 - a. _____ portion
 - 3. _____
 - a. _____ portions
 - b. Responsible for vital functions like
 - 1. _____
 - 2. _____
 - 3. _____

33. Diencephalon

- 1. Rests on top of the _____.
- 2. 4 main parts
 - A. _____
 - 1. Relay system for sensory information
 - a. Directs information to the correct part of the _____

 - B. _____
 - 1. Located below the _____
 - 2. Controls autonomic functions (regular and involuntarily)

1. _____

2. _____

3. _____

C. _____

1. small gland located behind the _____

2. Responsible for _____

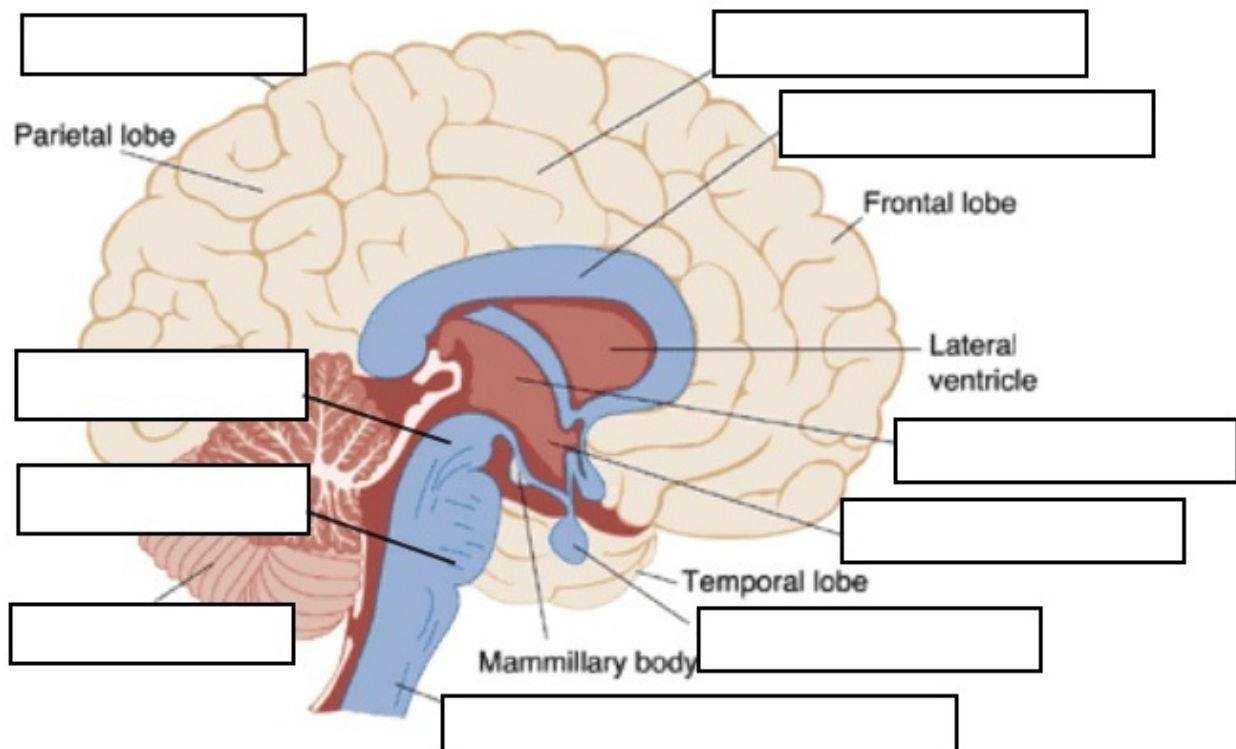
D. _____

1. Hangs off the _____

2. Looks like a ball on a string

3. Plays a very important role with _____ and

the endocrine system



35. Spinal Cord

A. a dense bundle of nerves that run through the _____
_____.

B. Main function is to link the _____ and the
_____ through _____

1. Ascending tract _____

2. Descending tract _____

C. Involved in _____

PERIPHERAL NERVOUS SYSTEM

36. The function of the peripheral nervous system is _____

37. Two components of the peripheral nervous system

A. _____

1. picks up information from the environment and sends it to brain

B. _____

1. takes information from the brain and sends it to an effector which causes a
change

a. _____

b. _____

38. Two components of the motor division

A. _____

B. _____

38. Somatic nervous system involves

A. _____

Example: _____

B. _____ (skeletal muscles that can't be consciously controlled)

39. Spinal reflexes occur very quickly because the impulses travel to the _____

instead of the _____.

40. The importance of spinal reflexes are

A. maintaining balance

B. regulating muscle tension (lifting something heavier than you thought)

C. avoid painful stimuli

41. Example of spinal reflex

1. _____

2. _____

42. Autonomic nervous system controls _____ that do not require

our conscious control

Example: _____

43. Two Parts of autonomic nervous system

A. _____

1. _____

B. _____

1. _____

Sympathetic Reactions	Parasympathetic Reactions

Sensory Division

44. Sensory division is _____

44. Information is collected by _____

A. _____

B. Most concentrated in

1. _____

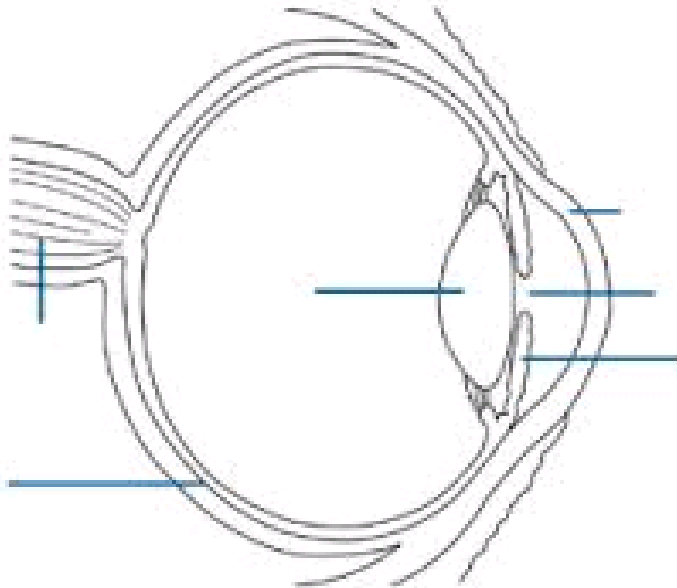
2. _____

45. Types of Sensory Receptors

Type of Receptor	Stimuli	Location
Thermoreceptor		
Pain Receptor		
Mechanoreceptor		
Photoreceptor		
Chemoreceptor		

Eyes

46. Structure of the eye



47. Steps to seeing something

- A. light enters the eye through the _____
- B. light passes through the _____
- C. lens focuses the eyes on the _____
- D. The retina contains two types of photoreceptors
 - A. _____ work best with dim light
 - B. _____ work best with bright light
- E. The retina sends information to the _____
- F. _____ takes light to the thalamus
- G. The thalamus relays information to the _____ lobe

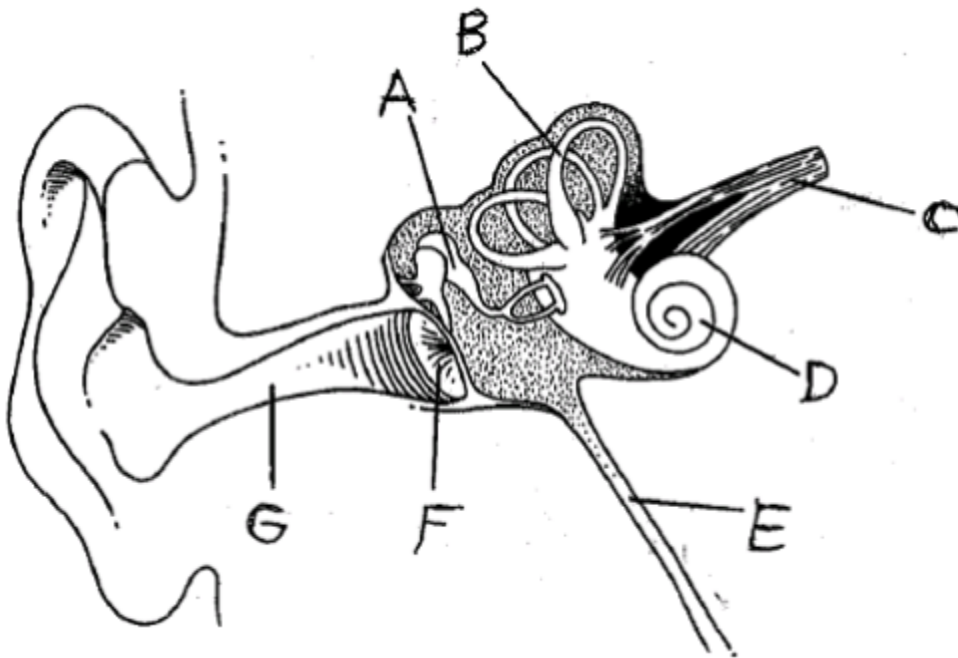
48. Other parts of the eye

- A. _____ protective layer that covers the eye
- B. _____ colored portion of the eye that helps control the dilating and controlling of the pupil
- C. Sclera : _____
- D. Vitreous humor _____
- E. Aqueous humor _____
- F. Tapetum _____
- G. Choroid _____

EARS

49. Ears work by converting _____ to _____ signal

50. Structure of Ear



A. _____

E. . _____

B. _____

F. _____

C. _____

G. _____

D. _____

50. Steps to hearing

A. sound enters the ear through the _____.

B. The sound strikes the _____ causing it
to

vibrate

C. Three small bones in the ear (_____, _____, and
_____) transfer vibrations to the _____

D. _____ is a fluid filled chamber in the ear that
contains

mechanoreceptors called _____.

E. _____ send information to the
_____ nerve

F. _____ sends the information to the thalamus

G. The thalamus relays the information to the _____

51. Other parts of the ear

A. _____ fluid filled chambers in the inner ear that
contain

hair cells.

1. Play an important role in _____

2. When you move the _____ in the semi-circular canal move with you

B. _____ is a tube that connects the ear, nose and throat

1. It regulates _____ in the inner ear

2. Opens during yawning, swallowing, chewing

3. It is responsible for _____ with pressure changes

52. There are two main types of chemoreceptors in the body

A. _____

1. _____

B. _____

1. _____