

NERVOUS SYSTEM

1. a) What are the two parts that the nervous system is composed of?

CNS (central nervous system) and PNS (peripheral nervous system)

b) What do they consist of?

CNS - brain and spinal cord

PNS - is made up of nerve cells connected throughout the body - it's like communication system

2. a) What are the two principal types of nerve cells?

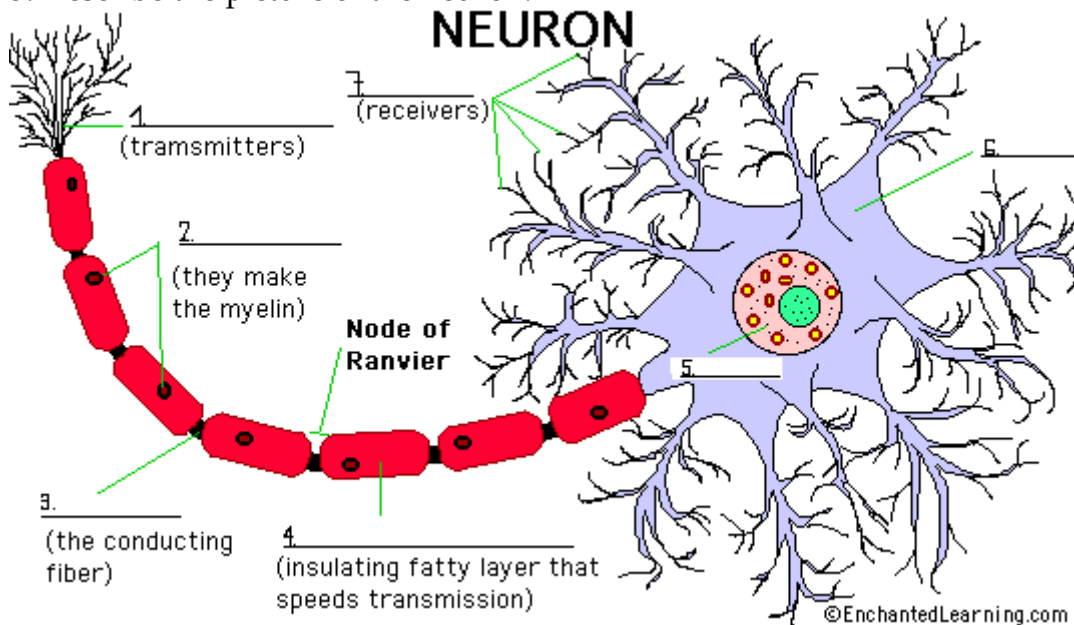
neurons and neuroglia (or glial cells)

b) What are their functions?

neurons - transmit information/impulses

neuroglia - maintain homeostasis, form myelin, and provide support and protection for the brain's neurons.

3. Describe the picture of the neuron.



1. Axon Terminals; 2. Schwann's Cells; 3. Axon; 4. Myelin Sheath; 5. Nucleus; 6. Cell Body; 7. Dendrites

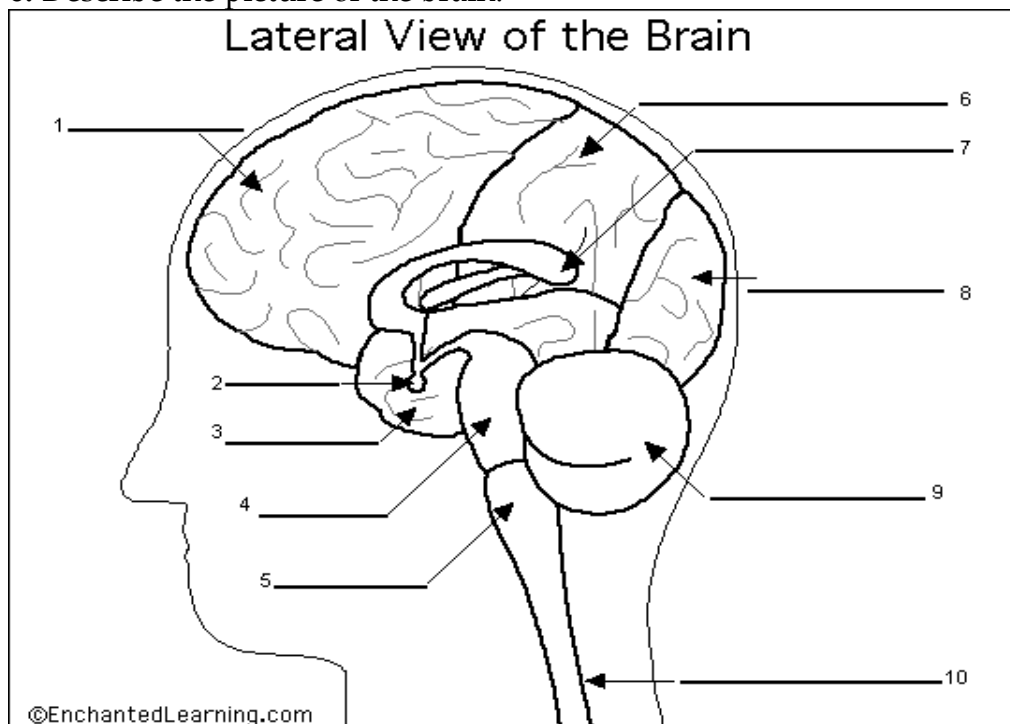
4. What is myelin? What is a synapse?

5. Match.

Cerebellum H.	a. The lowest section of the brainstem (at the top end of the spinal cord); it controls automatic functions including heartbeat, breathing, etc.
Parietal Lobe of the Cerebrum J.	b. A large bundle of nerve fibers that connect the left and right cerebral hemispheres. In the lateral section, it looks a bit like a "C" on its side.
Temporal Lobe of the Cerebrum G.	c. A gland attached to the base of the brain (located between the Pons and the Corpus Callosum) that secretes hormones.
Corpus Callosum B.	d. The part of the brainstem that joins the hemispheres of the cerebellum and connects the cerebrum with the cerebellum. It is located just above the Medulla Oblongata.
Occipital Lobe of	e. The top, front regions of each of the cerebral hemispheres - they are used

the Cerebrum I.	for reasoning, emotions, judgment, and voluntary movement.
Pituitary Gland C.	f. A thick bundle of nerve fibers that runs from the base of the brain to the hip area, running through the spine (vertebrae).
Medulla Oblongata A.	g. The region at the lower side of each cerebral hemisphere; contains centers of hearing and memory (located at the sides of the head).
Spinal Cord F.	h. The part of the brain below the back of the cerebrum. It regulates balance, posture, movement, and muscle coordination.
Frontal Lobe of the Cerebrum E.	i. The region at the back of each cerebral hemisphere that contains the centers of vision and reading ability (located at the back of the head).
Pons D.	j. The middle lobe of each cerebral hemisphere between the frontal and occipital lobes; it contains important sensory centers (located at the upper rear of the head).

6. Describe the picture of the brain.



1. Frontal Lobe of Cerebrum
2. Pituitary Gland
3. Temporal Lobe of Cerebrum
4. Pons
5. Medulla Oblongata
6. Parietal Lobe of Cerebrum
7. Corpus Callosum
8. Occipital Lobe of Cerebrum
9. Cerebellum
10. Spinal Cord

7. a) Name the four sections of the brain. **the cerebrum, cerebellum, diencephalon, and brain stem**

b) What are gyri? **folds or convolutions on the cerebral surface**

- c) What is the cerebral cortex? **a thin layer of gray matter which covers the entire cerebrum**
- d) What are the main functions of the forebrain? **sensory perception and interpretation, muscular movement, and the emotional aspects of behaviour and memory**
- e) Name the major functions of the cerebellum. **it coordinates and refines muscular movement, aids in maintaining equilibrium and balance of the body**
- f) What are the 2 main parts of the interbrain? Name them and describe them.
thalamus - receives sensory stimuli, processes and transmits them to the proper area of the cerebral cortex
hypothalamus - the chief function is the integration of autonomic nerve impulses and the regulation of certain endocrine functions
- g) Name the 3 parts of the brain stem. **the medulla oblongata, the pons and the midbrain (mesencephalon)**
- h) What main bodily activities does the brain stem control? **it serves as a pathway for impulse conduction between the brain and the spinal cord, it is the centre that controls respiration, blood pressure, and heart rate.**

8. Complete the short paragraph about the spinal cord with the following numbers.

70 31(2x) 35 13,500,000 43-45

The spinal cord is a bundle of nerves that connects the brain to other parts of the body. It is protected by a series of bones called vertebrae, which surround the spinal cord. The human spinal cord is about **43-45**..... cm long and approximately as wide as a human finger. There are **13,500,000**..... neurons that transmit electro-chemical signals in the spinal cord. The cord weighs approximately **35**..... grams. The vertebral column (bones) that supports it is about **70**..... cm long and has **31**..... segments and **31**..... pairs of spinal nerves.

9. a) What are the meninges? Name the 3 layers.

Meninges - coverings that protect the brain and the spinal cord

- the outermost coat is the dura mater

- the next layer is the arachnoid

- the innermost layer is the pia mater

b) What is the cerebrospinal fluid? **It is a clear, colourless fluid which contains proteins, glucose, urea, salts, and some white blood cells. It circulates around the spinal cord and the brain and through spaces called ventricles. It provides nutritive substances to the CNS, it also acts as a fluid cushion for the delicate structures of the CNS.**

10. Name some illnesses and diseases connected with the nervous system.

viz Nervous system - illnesses and diseases

Adapted from: http://en.wikipedia.org/wiki/Nervous_system