

Solutions

The Nervous System

1) Divisions of the Nervous System

Type the correct answer into each space. Some responses may occur more than once, as noted after each word or phrase.

Here are the options for filling the gaps:

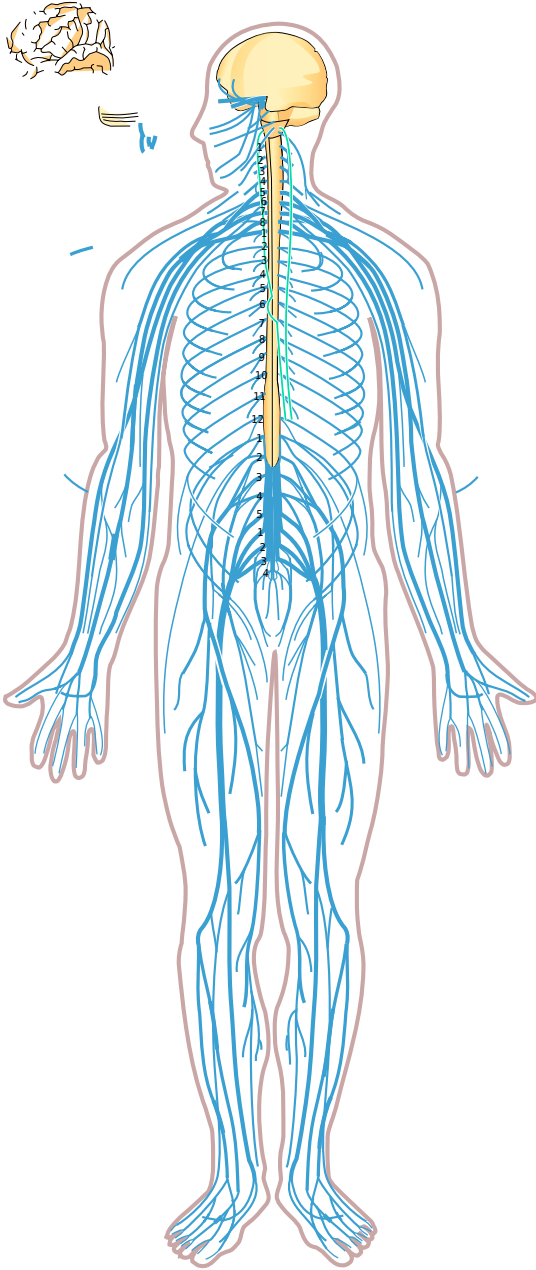
autonomic (x2) • brain (x2)

central • parasympathetic • peripheral

somatic • spinal cord • sympathetic

- a** central nervous system: made up of the brain and spinal cord
- b** spinal cord : able to initiate simple reflex actions without the brain's initial input
- c** somatic nervous system: responsible for voluntary movements
- d** autonomic nervous system: responsible for involuntary functions and processes that usually occur without our awareness
- e** brain : contains two hemispheres connected by the corpus callosum
- f** autonomic nervous system: controls automatic functions that are essential for survival, such as breathing and blood circulation
- g** brain : believed to contain 86 billion neurons
- h** sympathetic nervous system: the part of the autonomic nervous system that arouses the body in a crisis and mobilises the body's resources to fight or take flight
- i** peripheral nervous system: allows communication to and from the central nervous system from the body's organs, glands and muscles
- j** parasympathetic nervous system: responsible for calming the body and restoring it to its normal equilibrium after a period of intense stress or a threatening situation has passed

2)



More about the Divisions of the Nervous System

Picture provided via Wikimedia Commons by William Crochot

Refer to the diagram on the left to answer the questions below. You will need these gap fillers:

**central • motor • peripheral
sensory • spinal cord (x2)**

a The sensory neurons in the skin allow the brain to receive

information about touch, heat and cold and other environmental information.

b In the picture on the left, the blue lines represent the peripheral nervous system.

c The yellow parts of the diagram represent the central nervous system.

d The long bundle of fibres that can be seen running vertically along the backbone and coloured yellow is the spinal cord.

e The brain initiates an order that allows you to type the answer to this question. This requires the functioning of a motor neuron in the peripheral nervous system.

f If you accidentally touch a hot surface, your hand is withdrawn in a reflex reaction initiated without the brain's initial activity. This reflex is controlled by the spinal cord.

3) Defining the Parts of the Nervous System

You can use these gap fillers:

**arousing • calming • central • corpus callosum
fight-or-flight response • muscles
reflex • spinal cord • voluntary**

a The central nervous system is made up of the brain and spinal cord.

b The somatic nervous system is a part of the peripheral nervous system and is responsible for voluntary muscle movements, that is, movements that we consciously decide to carry out.

c The sympathetic nervous system forms a branch of the autonomic nervous system and has the role of arousing the body in times of stress or threat. This is called the fight-or-flight response.

d The two hemispheres of the brain are connected by a band of tissue called the corpus callosum.

e The spinal cord can initiate simple protective actions, such as the withdrawal of your hand from a source of heat. This initial withdrawal can occur without the intervention of the brain. It is called the spinal reflex.

f The parasympathetic nervous system is a part of the autonomic nervous system and is responsible for calming the body after a period of stress or threat.

g The peripheral nervous system allows communication to and from the central nervous system from the body's organs, glands and muscles.