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## Pool Canvas

Add, modify, and remove questions. Select a question type from the Add Question drop-down list and click **Go** to add questions. Use Creation Settings to establish which default options, such as feedback and images, are available for question creation.

Add [Creation Settings](#)**Name** Chapter 2: The Anatomy and Evolution of the Nervous System**Description****Instructions**[Modify](#)[◀ Add Question Here](#)Question 1 **Multiple Choice**[Modify](#)[Remove](#)

**Question** Structures located relatively toward the tail of a four-legged animal are referred to as

**Answer**

rostral.

✓ caudal.

dorsal.

ventral.

[◀ Add Question Here](#)Question 2 **Multiple Choice**[Modify](#)[Remove](#)

**Question** Structures located relatively toward the belly of a four-legged animal are referred to as

**Answer**

rostral.

caudal.

dorsal.

✓ ventral.

[◀ Add Question Here](#)Question 3 **Multiple Choice**[Modify](#)[Remove](#)

**Question** A dog's ears are \_\_\_\_\_ relative to its tail.

**Answer**

✓ rostral

caudal

dorsal

ventral

[◀ Add Question Here](#)Question 4 **Multiple Choice**[Modify](#)[Remove](#)

**Question** Which of the following pairs of terms mean the same thing?

**Answer**

ventral—superior

dorsal—inferior

✓ rostral—anterior

caudal—ipsilateral

 [Add Question Here](#)Question 5 **Multiple Choice**

Modify

Remove

**Question** An imaginary line that runs the length of the spinal cord to the front of the brain is known as the

**Answer**

- midline.
- proximal.
- ✓ neuraxis.
- plane of section.

 [Add Question Here](#)Question 6 **Multiple Choice**

Modify

Remove

**Question** A person's hand is \_\_\_\_\_ relative to his or her elbow.

**Answer**

- proximal
- ✓ distal
- contralateral
- ipsilateral

 [Add Question Here](#)Question 7 **Multiple Choice**

Modify

Remove

**Question** Two structures on opposite sides of the midline are referred to as

**Answer**

- proximal.
- distal.
- ipsilateral.
- ✓ contralateral.

 [Add Question Here](#)Question 8 **Multiple Choice**

Modify

Remove

**Question** Your right arm is \_\_\_\_\_ to your right leg.

**Answer**

- proximal
- distal
- contralateral
- ✓ ipsilateral

 [Add Question Here](#)Question 9 **Multiple Choice**

Modify

Remove

**Question** The nerve fibers that originate in the cerebral cortex and control movement cross the midline just above the junction of the medulla and spinal cord. As a result, these fibers provide input to \_\_\_\_\_ structures of the body, or structures that are on the \_\_\_\_\_ side of the midline as the cortical cells providing their motor input.

**Answer**

- ipsilateral; same
- ✓ contralateral; opposite

ipsilateral; opposite  
contralateral; same

◀ [Add Question Here](#)

Question 10 **Multiple Choice**

Modify

Remove

**Question** The neuraxis runs in a straight line

**Answer** parallel to the ground in four-legged animals and humans.  
perpendicular to the ground in four-legged animals and humans.  
✓ parallel to the ground in four-legged animals but makes a 90 degree turn in the brains of humans.  
parallel to the ground in humans but makes a 90 degree turn in the brains of four-legged animals.

◀ [Add Question Here](#)

Question 11 **Multiple Choice**

Modify

Remove

**Question** Researchers investigating appetite distinguish between the roles played by the ventromedial hypothalamus and the lateral hypothalamus. Where are these two structures located relative to one another?

**Answer** The lateral hypothalamus is contralateral to the ventromedial hypothalamus.  
The lateral hypothalamus is rostral to the ventromedial hypothalamus.  
The lateral hypothalamus is closer to the midline than the ventromedial hypothalamus.  
✓ The ventromedial hypothalamus is located closer to the midline than the lateral hypothalamus.

◀ [Add Question Here](#)

Question 12 **Multiple Choice**

Modify

Remove

**Question** The superior and inferior colliculi are located in the midbrain. Where are these two structures located relative to one another?

**Answer** ✓ The superior colliculi are located above the inferior colliculi.  
The superior colliculi are located below the inferior colliculi.  
The superior colliculi are closer to the midline than the inferior colliculi.  
The superior colliculi are farther away from the midline than the inferior colliculi.

◀ [Add Question Here](#)

Question 13 **Multiple Choice**

Modify

Remove

**Question** The anterior cingulate cortex (ACC) is located \_\_\_\_\_ the posterior cingulate cortex (PCC).

**Answer** behind  
✓ in front of  
below  
above

◀ [Add Question Here](#)

## Question 14 Multiple Choice

Modify

Remove

**Question** Most of the neural input to your left eyebrow originates in the motor cortex of the left hemisphere. In other words, your eyebrow receives input from the \_\_\_\_\_ hemisphere.

**Answer**

- proximal
- distal
- contralateral
- ✓ ipsilateral

[◀ Add Question Here](#)

## Question 15 Multiple Choice

Modify

Remove

**Question** Planes of section that divide the brain parallel to the midline are known as \_\_\_\_\_ sections.

**Answer**

- ✓ sagittal
- coronal
- horizontal
- axial

[◀ Add Question Here](#)

## Question 16 Multiple Choice

Modify

Remove

**Question** Researchers who wished to view a structure from the top of the head would use a \_\_\_\_\_ section.

**Answer**

- sagittal
- coronal
- ✓ horizontal
- midsagittal

[◀ Add Question Here](#)

## Question 17 Multiple Choice

Modify

Remove

**Question** Early computerized tomography (CT) equipment could take images from only one perspective, the axial or horizontal section. This means that the resulting images were from sections that are \_\_\_\_\_ to the ground, dividing the brain from \_\_\_\_\_.

**Answer**

- perpendicular; front to back
- perpendicular to the ground, dividing the brain from side to side.
- parallel to the midline, dividing the brain from side to side.
- ✓ parallel to the ground, dividing the brain from top to bottom.

[◀ Add Question Here](#)

## Question 18 Multiple Choice

Modify

Remove

**Question** In order to assess the size of the lateral ventricles in patients with schizophrenia, Dr. Weinberger has decided to use a coronal or frontal section. In other words, he is looking at a plane of section that is

**Answer**

- ✓ perpendicular to the ground, dividing the brain from front to back.
- perpendicular to the ground, dividing the brain from side to side.

parallel to the midline, dividing the brain from side to side.  
parallel to the ground, dividing the brain from top to bottom.

◀ [Add Question Here](#)

Question 19 **Multiple Choice**

Modify

Remove

**Question** The correct ordering of the layers of the meninges from the skull to the brain is:

**Answer**

- pia mater, arachnoid layer, dura mater.
- arachnoid layer, pia mater, dura mater.
- dura mater, pia mater, arachnoid layer.
- ✓ dura mater, arachnoid layer, pia mater.

◀ [Add Question Here](#)

Question 20 **Multiple Choice**

Modify

Remove

**Question** You just heard about a friend who has a tumor on the meninges of her right temporal lobe. This means that the tumor is \_\_\_\_\_ to the midline of the brain.

**Answer**

- contralateral
- medial
- ventral
- ✓ lateral

◀ [Add Question Here](#)

Question 21 **Multiple Choice**

Modify

Remove

**Question** Given the fact that the motor cortex controls movement of contralateral body parts, if your grandfather experiences damage to his right hemisphere motor cortex due to a stroke, it is likely that he will

**Answer**

- not be able to walk at all because he will be paralyzed from the waist down.
- ✓ have some paralysis in the left side of his body.
- not be able to understand anything you say to him.
- have some paralysis on the right side of his body.

◀ [Add Question Here](#)

Question 22 **Multiple Choice**

Modify

Remove

**Question** Your cat always walks up to you and wants you to pet it on its \_\_\_\_\_ surface, but your dog lies on its back and presents its \_\_\_\_\_ surface for you to scratch.

**Answer**

- ventral; dorsal
- ✓ dorsal; ventral
- rostral; caudal
- caudal; rostral

◀ [Add Question Here](#)

Question 23 **Multiple Choice**

Modify

Remove

**Question** A subdural hematoma is a “bruise” that often occurs following a head injury. Given your knowledge of anatomical terms, which of the following is the likely location of this type of injury?

**Answer**

- the scalp
- ✓ the meninges
- the lateral ventricles
- the central canal of the spinal cord

 [Add Question Here](#)**Question 24** **Multiple Choice**[Modify](#)[Remove](#)

**Question** Which of the meninges is described as a leatherlike tissue that follows the contours of the skull bones?

**Answer**

- pia mater
- ✓ dura mater
- arachnoid layer
- subarachnoid space

 [Add Question Here](#)**Question 25** **Multiple Choice**[Modify](#)[Remove](#)

**Question** Which layers of the meninges are found in the peripheral nervous system?

**Answer**

- pia mater, arachnoid layer, and dura mater
- pia mater only
- ✓ pia mater and dura mater only
- arachnoid layer and dura mater only

 [Add Question Here](#)**Question 26** **Multiple Choice**[Modify](#)[Remove](#)

**Question** The subarachnoid space is found between the arachnoid layer and the

**Answer**

- ✓ pia mater.
- dura mater.
- skull bones.
- lateral ventricles.

 [Add Question Here](#)**Question 27** **Multiple Choice**[Modify](#)[Remove](#)

**Question** Cerebrospinal fluid (CSF) is produced by the

**Answer**

- meninges.
- subarachnoid space.
- ✓ choroid plexus.
- ventricles.

 [Add Question Here](#)**Question 28** **Multiple Choice**[Modify](#)[Remove](#)

**Question** Cerebrospinal fluid (CSF) may be found in the

- Answer** central and peripheral nervous systems.  
peripheral nervous system only.  
lateral ventricles only.  
✓ ventricles, subarachnoid space, and central canal of the spinal cord.

◀ [Add Question Here](#)

Question 29 **Multiple Choice**

Modify

Remove

**Question** The primary purpose of cerebrospinal fluid (CSF) is to

- Answer** nourish the cells of the brain.  
✓ cushion or “float” the weight of the brain.  
remove toxins from the brain.  
provide circulation for chemical messengers.

◀ [Add Question Here](#)

Question 30 **Multiple Choice**

Modify

Remove

**Question** A friend calls and says his child has just come down with a fever. When the child bends her head forward she screams in pain. The parent asks you what to do. Given what you have read in this chapter, what would you suggest?

- Answer** Have the child lie down; she'll probably be fine.  
Call the pediatrician in the morning.  
✓ Get the child immediately to the nearest hospital, as the symptoms sound very much like meningitis. You may be wrong, but it's not worth taking the chance.  
The child probably has a brain tumor and should see a neurologist.

◀ [Add Question Here](#)

Question 31 **Multiple Choice**

Modify

Remove

**Question** The blood supply to the brain is provided by the

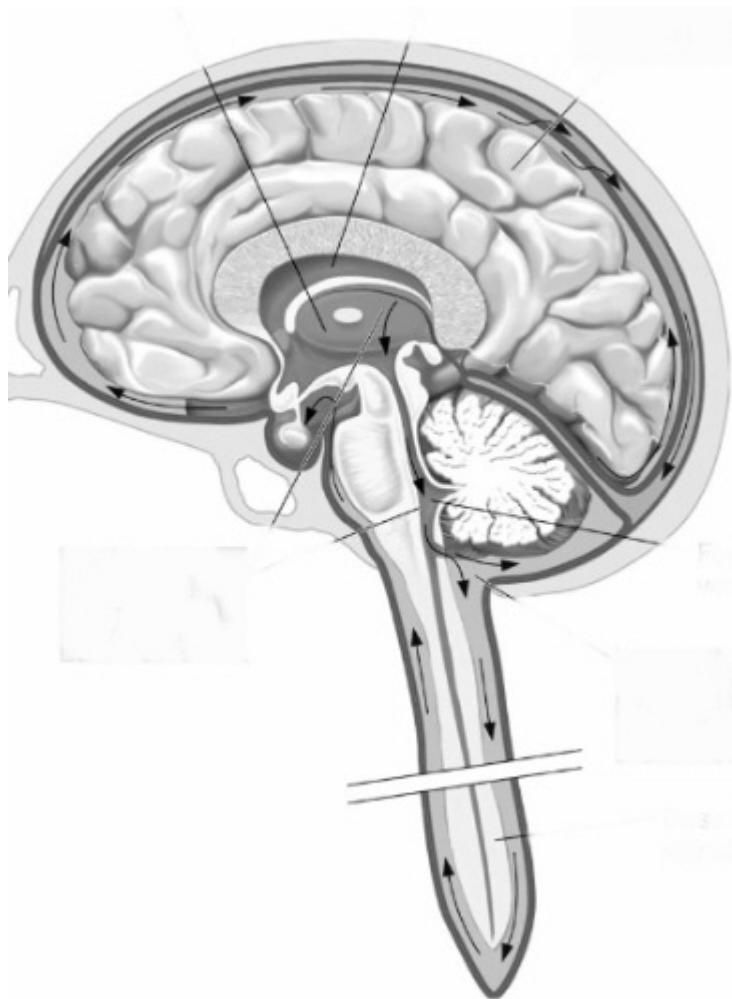
- Answer** ✓ carotid and vertebral arteries.  
subclavian and axillary arteries.  
celiac artery.  
aorta.

◀ [Add Question Here](#)

Question 32 **Multiple Choice**

Modify

Remove

**Question**

This figure illustrates the circulation of

**Answer**

blood through the brain and spinal cord.

cerebrospinal fluid between the meninges and the upper layer of cortex.

✓ cerebrospinal fluid through the ventricles, the central canal of the spinal cord, and in the subarachnoid space.

cerebrospinal fluid, from its manufacture in the subarachnoid space into the ventricles and central canal of the spinal cord.

**Correct****Feedback**

(See Figure 2.5b)

**Incorrect****Feedback**

(See Figure 2.5b)

◀ [Add Question Here](#)

Question 33

**Multiple Choice**

Modify

Remove

**Question** A condition that results when the circulation of cerebrospinal fluid (CSF) is blocked is known as

**Answer**

✓ hydrocephalus.

meningioma.

meningitis.

septicemia.

◀ [Add Question Here](#)



## Question 34 Multiple Choice

Modify

Remove

**Question** If you go to the doctor with a fever, horrible headache, and a stiff neck, why might the doctor suggest a spinal tap?

**Answer** A spinal tap will tell if you have a brain tumor.

✓ The cerebrospinal fluid (CSF) may tell the doctor if there is any evidence of meningitis or encephalitis.

The cerebrospinal fluid (CSF) is the same as the blood supply, and the doctor can tell if you have an infection.

The cerebrospinal fluid (CSF) is the only way the doctor can tell if you are on drugs.

[◀ Add Question Here](#)

## Question 35 Multiple Choice

Modify

Remove

**Question** Why would your doctor want to do a spinal tap if she suspected that you had an infection of the brain?

**Answer** ✓ Because the cerebrospinal fluid (CSF) of the spinal cord is continuous with the cerebrospinal fluid (CSF) of the brain.

Because the spinal cord is part of the central nervous system.

Because the peripheral and central nervous systems are connected.

She wouldn't do a spinal tap because the spinal cord is made of different kinds of neurons than the brain.

[◀ Add Question Here](#)

## Question 36 Multiple Choice

Modify

Remove

**Question** Which of the following is found in the peripheral nervous system?

**Answer** the corpus callosum

the red nucleus

✓ the sympathetic nervous system

the central canal

[◀ Add Question Here](#)

## Question 37 Multiple Choice

Modify

Remove

**Question** Which of the following statements is correct?

**Answer** The central nervous system is encased in bone, but has no cerebrospinal fluid.

The peripheral nervous system is encased in bone, but has no cerebrospinal fluid.

The peripheral nervous system is encased with bone and is bathed with cerebrospinal fluid.

✓ The central nervous system is encased with bone and is bathed with cerebrospinal fluid.

[◀ Add Question Here](#)

## Question 38 Multiple Choice

Modify

Remove

**Question** The spinal cord extends \_\_\_\_\_ of the vertebral column.

- Answer**
- ☐ down the entire length
  - ☒ down about two-thirds the length
  - ☐ about halfway down the length
  - ☐ about a third of the way down the length

◀ [Add Question Here](#)

Modify

Remove

Question 39 **Multiple Choice**

**Question** Running down the center of the spinal cord is the

- Answer**
- ☐ subarachnoid space.
  - ☐ fourth ventricle.
  - ☒ central canal.
  - ☐ spinal ventricle.

◀ [Add Question Here](#)

Modify

Remove

Question 40 **Multiple Choice**

**Question** The region consisting of the head, neck, and arms is served by nerves exiting the \_\_\_\_\_ division of the spinal cord.

- Answer**
- ☐ sacral
  - ☐ lumbar
  - ☐ thoracic
  - ☒ cervical

◀ [Add Question Here](#)

Modify

Remove

Question 41 **Multiple Choice**

**Question** The correct order of the spinal divisions from rostral to caudal is:

- Answer**
- ☒ cervical, thoracic, lumbar, sacral, coccygeal.
  - ☐ cervical, lumbar, thoracic, sacral, coccygeal.
  - ☐ thoracic, cervical, lumbar, sacral, coccygeal.
  - ☐ cervical, thoracic, lumbar, coccygeal, sacral.

◀ [Add Question Here](#)

Modify

Remove

Question 42 **Multiple Choice**

**Question** A thoracic surgeon operates in the vicinity of the thoracic division of the spinal cord; that is, the structures located in the

- Answer**
- ☐ neck
  - ☒ torso
  - ☐ lower back
  - ☐ genitals and legs

◀ [Add Question Here](#)

Modify

Remove

Question 43 **Multiple Choice**

**Question** As a result of an accident that occurred while playing football, Michael must wear a device known as a cervical collar until his injuries heal. Based on this information, we know that Michael injured his

**Answer**

- shoulder
- knee
- ✓ neck
- lower back

◀ [Add Question Here](#)

Question 44 **Multiple Choice**

Modify

Remove

**Question** Julie's physician tells her that she damaged a disk in the lumbar region of her spinal cord. It is likely that Julie sought medical advice due to pain she experienced in her

**Answer**

- neck
- upper back
- shoulder
- ✓ lower back

◀ [Add Question Here](#)

Question 45 **Multiple Choice**

Modify

Remove

**Question** Spinal neurons that pass motor information to the body's muscles may be found in \_\_\_\_\_ of the spinal cord.

**Answer**

- the white matter
- the dorsal horns
- ✓ the ventral horns
- both the dorsal and ventral horns

◀ [Add Question Here](#)

Question 46 **Multiple Choice**

Modify

Remove

**Question** Axons carrying sensory information to the brain may be found in

**Answer**

- the ventral white matter of the spinal cord.
- ✓ the dorsal white matter of the spinal cord.
- both the ventral and dorsal white matter of the spinal cord.
- the lateral white matter of the spinal cord only.

◀ [Add Question Here](#)

Question 47 **Multiple Choice**

Modify

Remove

**Question** The knee jerk reflex, in which your foot kicks in response to a tap on your knee, is also known as a \_\_\_\_\_ reflex.

**Answer**

- withdrawal
- postural
- ✓ patellar
- polysynaptic

◀ [Add Question Here](#)

## Question 48 Multiple Choice

Modify

Remove

**Question** You've just heard that someone's spinal cord has been injured at L2 (lumbar nerve 2). Given what you've learned in this chapter, which of the following will likely be true?

- Answer**
- The person will be totally paralyzed from the neck down.
  - The person will be totally paralyzed from just below the arms.
  - ✓ Depending on how severe the injury, the person may be unable to move or feel anything from around the waist down.
  - Depending on how severe the injury, the person may be unable to move or feel anything from around the chest down.

 [Add Question Here](#)

## Question 49 Multiple Choice

Modify

Remove

**Question** A person with cervical spinal cord damage is known as a \_\_\_\_\_ and experiences loss of sensation and motor control in the \_\_\_\_\_.

- Answer**
- paraplegic; arms and legs
  - paraplegic; legs only
  - ✓ quadriplegic; arms and legs
  - quadriplegic; legs only

 [Add Question Here](#)

## Question 50 Multiple Choice

Modify

Remove

**Question** The myelencephalon and metencephalon are located in the

- Answer**
- ✓ hindbrain.
  - midbrain.
  - forebrain.
  - cerebellum.

 [Add Question Here](#)

## Question 51 Multiple Choice

Modify

Remove

**Question** Another name for the midbrain is the

- Answer**
- myelencephalon.
  - metencephalon.
  - ✓ mesencephalon.
  - diencephalon.

 [Add Question Here](#)

## Question 52 Multiple Choice

Modify

Remove

**Question** The brainstem contains the

- Answer**
- hindbrain only.
  - midbrain only.
  - ✓ hindbrain and midbrain.
  - hindbrain, midbrain, and forebrain.

 [Add Question Here](#)

## Question 53 Multiple Choice

Modify

Remove

**Question** The structure located just rostral to the junction between the spinal cord and the brain is the

**Answer**

- ☒ medulla.
- ☐ cerebellum.
- ☐ pons.
- ☐ reticular formation.

[◀ Add Question Here](#)

## Question 54 Multiple Choice

Modify

Remove

**Question** Jonathan has been diagnosed with a tumor located in his medulla. His physician warns him that until treated, the tumor will most directly affect his

**Answer**

- ☐ balance and motor coordination.
- ☒ breathing, heart rate, and blood pressure.
- ☐ control of aggression.
- ☐ decision-making.

[◀ Add Question Here](#)

## Question 55 Multiple Choice

Modify

Remove

**Question** The pons and cerebellum make up which of the following divisions?

**Answer**

- ☐ telecephalon
- ☐ diencephalon
- ☐ mesencephalon
- ☒ metencephalon

[◀ Add Question Here](#)

## Question 56 Multiple Choice

Modify

Remove

**Question** The brainstem contains which of the following structures?

**Answer**

- ☐ the central sulcus
- ☐ the corpus callosum
- ☒ the medulla
- ☐ the hypothalamus

[◀ Add Question Here](#)

## Question 57 Multiple Choice

Modify

Remove

**Question** The medulla contains nuclei responsible for which of the following functions?

**Answer**

- ☐ balance and motor coordination
- ☒ heart rate and respiration
- ☐ visual reflexes
- ☐ auditory reflexes

[◀ Add Question Here](#)

## Question 58 Multiple Choice

Modify

Remove

**Question** The cochlear and vestibular nuclei are located in the

**Answer**

- midbrain.
- medulla.
- ✓ pons.
- cerebellum.

◀ [Add Question Here](#)

Question 59 **Multiple Choice**

Modify

Remove

**Question** Lucy is experiencing problems with dizziness and maintaining her balance. Her physician is likely to look for the source of her problems in the

**Answer**

- ✓ vestibular system and the cerebellum.
- reticular formation.
- red nucleus and the cerebellum.
- cochlear nucleus and the inferior colliculi.

◀ [Add Question Here](#)

Question 60 **Multiple Choice**

Modify

Remove

**Question** The reticular formation is involved with regulation of

**Answer**

- appetite.
- heart rate and respiration.
- sexual activity.
- ✓ sleep and arousal.

◀ [Add Question Here](#)

Question 61 **Multiple Choice**

Modify

Remove

**Question** The reticular formation is located in the

**Answer**

- medulla.
- medulla and pons.
- pons.
- ✓ medulla, pons, and midbrain.

◀ [Add Question Here](#)

Question 62 **Multiple Choice**

Modify

Remove

**Question** Your textbook tells you that the medulla, like the spinal cord, contains large quantities of white matter. This means that

**Answer**

- the medulla contains large numbers of nuclei which control breathing and other vital functions that are mediated by the spinal cord.
- ✓ many axons travel through the medulla, just like they do through the spinal cord.
- there is a great deal of material in both the spinal cord and medulla, the functions of which we do not understand.
- many reflexes are controlled by the medulla and the spinal cord.

◀ [Add Question Here](#)

Question 63 **Multiple Choice**

Modify

Remove

**Question** The locus coeruleus is located in the

**Answer**

- medulla.
- ✓ pons.
- midbrain.
- cerebellum.

◀ [Add Question Here](#)

Question 64 **Multiple Choice**

Modify

Remove

**Question** Which of the following structures does **not** contain any parts of the reticular formation?

**Answer**

- the midbrain
- ✓ the diencephalon
- the medulla
- the hindbrain

◀ [Add Question Here](#)

Question 65 **Multiple Choice**

Modify

Remove

**Question** Which of the following structures are important to the regulation of mood, arousal, and sleep?

**Answer**

- the vestibular nucleus and the cochlear nucleus
- ✓ the raphe nuclei and the locus coeruleus
- the red nucleus and substantia nigra
- periaqueductal gray and the red nucleus

◀ [Add Question Here](#)

Question 66 **Multiple Choice**

Modify

Remove

**Question** Alcohol interferes with skilled movements primarily through its action on the

**Answer**

- reticular formation.
- hypothalamus.
- ✓ cerebellum.
- medulla.

◀ [Add Question Here](#)

Question 67 **Multiple Choice**

Modify

Remove

**Question** Autism is frequently associated with abnormalities in the

**Answer**

- ✓ cerebellum.
- reticular formation.
- medulla.
- vestibular nuclei.

◀ [Add Question Here](#)

Question 68 **Multiple Choice**

Modify

Remove

**Question** Which of the following structures is found in humans, but not in other animals?

**Answer**

- periaqueductal gray
- the superior colliculi
- ✓ the neostriate nucleus
- the substantia nigra

◀ [Add Question Here](#)

Question 69 **Multiple Choice**

Modify

Remove

**Question** Stanley is experiencing ongoing degeneration in his cerebellum. Consequently, which of the following behaviors may become progressively more difficult for him?

**Answer**

- breathing
- maintaining a normal core body temperature
- sleeping
- ✓ speaking clearly

◀ [Add Question Here](#)

Question 70 **Multiple Choice**

Modify

Remove

**Question** The dorsal portion of the midbrain is also known as the

**Answer**

- tegmentum.
- ✓ tectum.
- cerebral aqueduct.
- reticular formation.

◀ [Add Question Here](#)

Question 71 **Multiple Choice**

Modify

Remove

**Question** A pathway considered important to our experience of reward and pleasure originates in the ventral tegmentum. Where would we look to find this area?

**Answer**

- in the spinal cord
- in the hindbrain
- ✓ in the midbrain
- in the forebrain

◀ [Add Question Here](#)

Question 72 **Multiple Choice**

Modify

Remove

**Question** The cerebral aqueduct links the

**Answer** ✓ third and fourth ventricles.

- two lateral ventricles.
- fourth ventricle and the spinal canal.
- fourth ventricle and the subarachnoid space.

◀ [Add Question Here](#)

Question 73 **Multiple Choice**

Modify

Remove



**Question** Which of the following structures participates in our experience of pain?

**Answer**

- the red nucleus
- the substantia nigra
- ✓ periaqueductal gray
- the superior colliculi

◀ [Add Question Here](#)

Question 74 **Multiple Choice**

Modify

Remove

**Question** Our enjoyment of a good surround sound system, which makes it seem like sounds are coming from different directions in our environment, depends on our

**Answer**

- superior colliculi.
- ✓ inferior colliculi.
- periaqueductal gray.
- substantia nigra.

◀ [Add Question Here](#)

Question 75 **Multiple Choice**

Modify

Remove

**Question** The basal ganglia, substantia nigra, and red nucleus are important for which of the following functions?

**Answer**

- memory
- ✓ motor control
- sympathetic nervous system control
- emotion

◀ [Add Question Here](#)

Question 76 **Multiple Choice**

Modify

Remove

**Question** Several visual reflexes are managed by the

**Answer**

- red nucleus.
- periaqueductal gray.
- ✓ superior colliculi.
- inferior colliculi.

◀ [Add Question Here](#)

Question 77 **Multiple Choice**

Modify

Remove

**Question** The diencephalon contains which of the following structures?

**Answer**

- ✓ the thalamus and hypothalamus
- the thalamus and the basal ganglia
- the inferior and superior colliculi
- the substantia nigra and the basal ganglia

◀ [Add Question Here](#)

Question 78 **Multiple Choice**

Modify

Remove

**Question** Before proceeding to the cerebral cortex, input from most sensory systems converges on the

**Answer**

- hypothalamus.
- ✓ thalamus.
- amygdala.
- hippocampus.

◀ [Add Question Here](#)

Question 79 **Multiple Choice**

Modify

Remove

**Question** Katie has a tumor that is disrupting her ability to maintain her body temperature. Near which of the following structures is Katie's tumor most likely to be located?

**Answer**

- ✓ hypothalamus
- periaqueductal gray
- locus coeruleus
- raphe nuclei

◀ [Add Question Here](#)

Question 80 **Multiple Choice**

Modify

Remove

**Question** Major regulatory functions, including hunger, thirst, sex, and temperature control, are managed primarily by the

**Answer**

- ✓ hypothalamus.
- thalamus.
- amygdala.
- hippocampus.

◀ [Add Question Here](#)

Question 81 **Multiple Choice**

Modify

Remove

**Question** The release of hormones by the pituitary gland is regulated primarily by the

**Answer**

- ✓ hypothalamus.
- thalamus.
- amygdala.
- hippocampus.

◀ [Add Question Here](#)

Question 82 **Multiple Choice**

Modify

Remove

**Question** The caudate nucleus, globus pallidus, putamen, and subthalamic nucleus make up the

**Answer**

- hypothalamus.
- reticular formation.
- ✓ basal ganglia.
- limbic system.

◀ [Add Question Here](#)

Question 83 **Multiple Choice**

Modify

Remove

**Question** The subthalamic nucleus is part of the

**Answer**

- diencephalon.
- reticular formation.
- ✓ basal ganglia.
- limbic system.

◀ [Add Question Here](#)

Question 84 **Multiple Choice**

Modify

Remove

**Question** Anatomists often group the nucleus accumbens, which participates in our sense of pleasure and reward, with the

**Answer**

- reticular formation.
- vestibular system.
- cranial nerve nuclei.
- ✓ basal ganglia.

◀ [Add Question Here](#)

Question 85 **Multiple Choice**

Modify

Remove

**Question** Some anatomists group the \_\_\_\_\_ with the basal ganglia.

**Answer**

- thalamus and the hypothalamus
- hippocampus and the amygdala
- reticular formation and the substantia nigra
- ✓ amygdala and the substantia nigra

◀ [Add Question Here](#)

Question 86 **Multiple Choice**

Modify

Remove

**Question** Degeneration of the basal ganglia is a feature of which of the following conditions?

**Answer**

- Alzheimer's disease
- ✓ Parkinson's disease
- schizophrenia
- autism

◀ [Add Question Here](#)

Question 87 **Multiple Choice**

Modify

Remove

**Question** The structures of the limbic system are particularly important in

**Answer**

- ✓ emotion and learning.
- sensation.
- motor control.
- regulation of hunger and thirst.

◀ [Add Question Here](#)

Question 88 **Multiple Choice**

Modify

Remove

**Question** The hippocampus is important in which of the following functions?

**Answer** ✓ learning and memory  
motor control  
recognition of biological danger  
regulation of hunger and thirst

◀ [Add Question Here](#)

Question 89 **Multiple Choice**

Modify

Remove

**Question** Stephen's surgery for epilepsy has made it very difficult for him to learn the names of new people he meets. It is most likely that Stephen's surgery affected his

**Answer** ✓ hippocampus in both of his temporal lobes.  
locus coeruleus.  
hypothalamus.  
nucleus accumbens.

◀ [Add Question Here](#)

Question 90 **Multiple Choice**

Modify

Remove

**Question** Damage to the hippocampus in both cerebral hemispheres is associated with

**Answer** Parkinson's disease.  
schizophrenia.  
retrograde amnesia.  
✓ anterograde amnesia.

◀ [Add Question Here](#)

Question 91 **Multiple Choice**

Modify

Remove

**Question** The amygdala participates in which of the following behaviors?

**Answer** learning and memory  
motor control  
✓ fear and aggression  
regulation of hunger and thirst

◀ [Add Question Here](#)

Question 92 **Multiple Choice**

Modify

Remove

**Question** Students in a biological psychology laboratory were investigating the ability of rats to form associations between tones and electrical shock. Lesions to which of the following structures would make it very difficult for the students to teach their rats to be afraid of the tones?

**Answer** the nucleus accumbens  
✓ the amygdala  
the substantia nigra  
the hypothalamus

◀ [Add Question Here](#)

Question 93 **Multiple Choice**

Modify

Remove

**Question** Which of the following structures is **not** included in the limbic system?

- Answer**
- the hypothalamus
  - ✓ the thalamus
  - the cingulate cortex
  - the amygdala

◀ [Add Question Here](#)

Question 94 **Multiple Choice**

Modify

Remove

**Question** Cindy brought a fake rubber snake into the lab where her rhesus monkeys lived. Most of the monkeys responded with fear vocalizations, but one did not. Cindy knew this monkey had been in a lesion experiment prior to coming to her lab, but she didn't know what type of lesion had been done. What would you tell Cindy about her monkey?

- Answer**
- He probably didn't have a lesion at all, as ignoring fake snakes is considered normal for rhesus monkeys.
  - He probably had a lesion in the hippocampus of both hemispheres.
  - ✓ He probably had a lesion in the amygdala of both hemispheres.
  - He probably had a lesion of the ventromedial nucleus of the hypothalamus.

◀ [Add Question Here](#)

Question 95 **Multiple Choice**

Modify

Remove

**Question** You have noticed that you sometimes have a "knee jerk" emotional reaction to particular things, even if you try to control your emotions. Given what you have learned so far, what might explain this?

- Answer**
- We can't control either emotional or physical reflexes.
  - ✓ Emotion is primarily controlled by the limbic system, which does not include parts of the brain involved with logical thought.
  - Emotion is primarily controlled by the basal ganglia, which do not communicate with the cerebral cortex.
  - There is no need to explain this situation. Anyone can control emotional feelings with effort.

◀ [Add Question Here](#)

Question 96 **Multiple Choice**

Modify

Remove

**Question** Lesions of the \_\_\_\_\_ usually produce rage and attack behaviors.

- Answer**
- hippocampus
  - amygdala
  - ✓ septal area
  - thalamus

◀ [Add Question Here](#)

Question 97 **Multiple Choice**

Modify

Remove

**Question** The olfactory bulbs participate in the processing of which sensory modality?

- Answer**
- vision
  - touch
  - audition

✓ smell

◀ [Add Question Here](#)

Question 98 **Multiple Choice**

Modify

Remove

**Question** Von Economo neurons are found in the

- Answer**
- hippocampus of all mammals.
  - hippocampus of great apes and humans.
  - cingulate cortex of all mammals.
  - ✓ cingulate cortex of great apes and humans.

◀ [Add Question Here](#)

Question 99 **Multiple Choice**

Modify

Remove

**Question** Jessica was playing poker while on a vacation in Las Vegas, and in a fit of exuberance, bet all of her money on one hand. Unfortunately, it turned out to be a losing hand. If we were using functional magnetic resonance imaging (fMRI) to observe Jessica's reactions to losing, which structure might have shown especially increased activation?

- Answer**
- ✓ her anterior cingulate cortex
  - her posterior cingulate cortex
  - her amygdala
  - her hippocampus

◀ [Add Question Here](#)

Question 100 **Multiple Choice**

Modify

Remove

**Question** Paul just found out that all of his friends in the dorm went to a party without him. Which of the following structures in Paul's brain would we expect to be especially activated by this social rejection?

- Answer**
- the amygdala
  - the hippocampus
  - ✓ the anterior cingulate cortex
  - the posterior cingulate cortex

◀ [Add Question Here](#)

Question 101 **Multiple Choice**

Modify

Remove

**Question** The "bumps" or ridges of the cerebral cortex are known as

- Answer**
- ✓ gyri.
  - sulci.
  - fissures.
  - ganglia.

◀ [Add Question Here](#)

Question 102 **Multiple Choice**

Modify

Remove

**Question** Korbinian Brodmann's system for dividing the cerebral cortex into 52 areas is based on

- Answer**
- divisions of the surface by sulci and fissures.
  - regular units covering one square inch.
  - the function of the underlying cortex of each area.
  - ✓ the distribution of cell bodies in the six layers of cortex.

◀ [Add Question Here](#)

Question 103 **Multiple Choice**

Modify

Remove

**Question** The “valleys” or depressions between ridges of cerebral cortex are known as

- Answer**
- gyri.
  - ✓ sulci.
  - nuclei.
  - ganglia.

◀ [Add Question Here](#)

Question 104 **Multiple Choice**

Modify

Remove

**Question** A particularly large sulcus is known as a

- Answer**
- gyrus.
  - fasciculus.
  - ✓ fissure.
  - lemniscus.

◀ [Add Question Here](#)

Question 105 **Multiple Choice**

Modify

Remove

**Question** The degree of cortical convolution in the brain predicts a species'

- Answer**
- ✓ intelligence.
  - physical size.
  - identity as an herbivore, a carnivore, or an omnivore.
  - identity as nocturnal or diurnal.

◀ [Add Question Here](#)

Question 106 **Multiple Choice**

Modify

Remove

**Question** How many distinct layers are typically found in the cerebral cortex?

- Answer**
- two
  - four
  - ✓ six
  - eight

◀ [Add Question Here](#)

Question 107 **Multiple Choice**

Modify

Remove

**Question** Which of the cortical layers contains no cell bodies?

- Answer**
- ✓ layer I
  - layers II and IV

layers III and V  
layer VI

◀ [Add Question Here](#)

Question 108 **Multiple Choice**

Modify

Remove

**Question** Granule cells are usually found in cortical

**Answer**

- layer I.
- ✓ layers II and IV.
- layers III and V.
- layer VI.

◀ [Add Question Here](#)

Question 109 **Multiple Choice**

Modify

Remove

**Question** Pyramidal cells are usually found in cortical

**Answer**

- layer I.
- layers II and IV.
- ✓ layers III and V.
- layer VI.

◀ [Add Question Here](#)

Question 110 **Multiple Choice**

Modify

Remove

**Question** Output from the cortex to other parts of the nervous system usually originates in which of the cortical layers?

**Answer**

- II and IV
- ✓ III and IV
- II and II
- V and VI

◀ [Add Question Here](#)

Question 111 **Multiple Choice**

Modify

Remove

**Question** Although the human cerebral cortex performs many higher order cognitive functions,

**Answer**

- its volume is similar to the cortex of cats and dogs.
- its functions are quite different from the functions performed by the cortex of other mammals.
- it makes up nearly the entire volume of the cerebral hemisphere.
- ✓ it makes up only a thin layer of tissue covering the cerebral hemispheres.

◀ [Add Question Here](#)

Question 112 **Multiple Choice**

Modify

Remove

**Question** The caudal boundary of the frontal lobe is formed by the

**Answer**

- longitudinal fissure.
- lateral sulcus.



- ✓ calcarine fissure.
- ✓ central sulcus.

[◀ Add Question Here](#)**Question 113 Multiple Choice**[Modify](#)[Remove](#)

**Question** The most rostral lobes of the cerebral cortex are the \_\_\_\_\_ lobes.

**Answer**

- ✓ frontal
- parietal
- temporal
- occipital

[◀ Add Question Here](#)**Question 114 Multiple Choice**[Modify](#)[Remove](#)

**Question** The most caudal lobes of the cerebral cortex are the \_\_\_\_\_ lobes.

**Answer**

- frontal
- parietal
- temporal
- ✓ occipital

[◀ Add Question Here](#)**Question 115 Multiple Choice**[Modify](#)[Remove](#)

**Question** Primary somatosensory cortex is located in the \_\_\_\_\_ lobes.

**Answer**

- frontal
- ✓ parietal
- temporal
- occipital

[◀ Add Question Here](#)**Question 116 Multiple Choice**[Modify](#)[Remove](#)

**Question** The postcentral gyrus contains primary \_\_\_\_\_ cortex.

**Answer**

- ✓ somatosensory
- motor
- auditory
- visual

[◀ Add Question Here](#)**Question 117 Multiple Choice**[Modify](#)[Remove](#)

**Question** Primary visual cortex is located in the \_\_\_\_\_ lobes.

**Answer**

- frontal
- parietal
- temporal
- ✓ occipital

[◀ Add Question Here](#)

## Question 118 Multiple Choice

Modify

Remove

**Question** Primary auditory cortex is located in the \_\_\_\_\_ lobes.

**Answer**

- frontal
- parietal
- ✓ temporal
- occipital

[◀ Add Question Here](#)

## Question 119 Multiple Choice

Modify

Remove

**Question** Primary motor cortex is located in the \_\_\_\_\_ lobes.

**Answer**

- ✓ frontal
- parietal
- temporal
- occipital

[◀ Add Question Here](#)

## Question 120 Multiple Choice

Modify

Remove

**Question** Following a serious head injury, Robert began to make a series of impulsive decisions that led to negative consequences, such as quitting his job and leaving his wife for a woman he met in a bar. It is most likely that Robert's injury affected his \_\_\_\_\_ lobes.

**Answer**

- occipital
- ✓ frontal
- parietal
- temporal

[◀ Add Question Here](#)

## Question 121 Multiple Choice

Modify

Remove

**Question** Clare's head injury has left her with serious problems in planning and executive cognitive functions, such as being able to remember a new friend's telephone number long enough to put it in her cell phone. It is likely that Clare's injury damaged her

**Answer**

- amygdala.
- hippocampus.
- ✓ dorsolateral prefrontal cortex.
- posterior cingulate cortex.

[◀ Add Question Here](#)

## Question 122 Multiple Choice

Modify

Remove

**Question** Given what you know about the functions of the frontal lobes, which of the following are likely side effects of the ill-conceived frontal lobotomy procedure that was popular in the middle of the 20<sup>th</sup> century?

**Answer**

- sleep disturbances
- depression

- obesity
- ✓ impulsivity, personality change, and poor decision-making

[◀ Add Question Here](#)**Question 123 Multiple Choice**

Modify

Remove

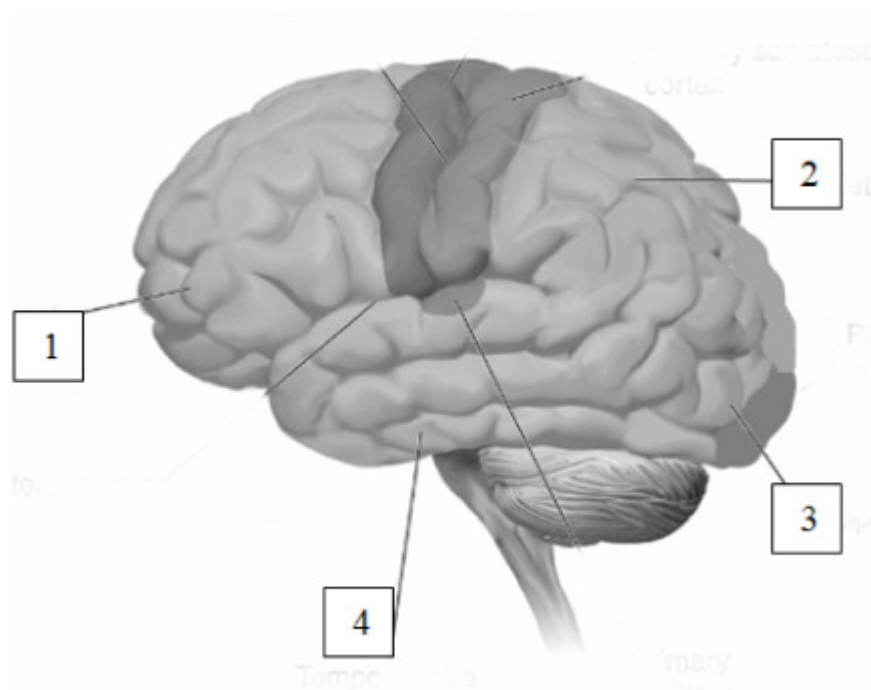
**Question** The two cerebral hemispheres are connected by the

- Answer** ✓
- anterior commissure and the corpus callosum.
  - anterior and medial commissures.
  - medial commissure and the corpus callosum.
  - arcuate fasciculus and the corpus callosum.

[◀ Add Question Here](#)

Modify

Remove

**Question 124 Multiple Choice**

**Question**

Among the functions localized in the area designated "1" above are

- Answer** ✓
- decision-making and planning.
  - processing of sound and visual recognition of objects.
  - generating movement and perceiving body position.
  - primary visual processing and perception of movement.

**Correct Feedback** (see Figure 2.19)

**Incorrect Feedback** (see Figure 2.19)

[◀ Add Question Here](#)

Modify

Remove

**Question 125 Multiple Choice**

**Question** A patient who becomes uncharacteristically impulsive and unable to maintain his or her typical attention span may have experienced damage to his or her \_\_\_\_\_ lobes.

**Answer**

- ✓ frontal
- parietal
- temporal
- occipital

[◀ Add Question Here](#)**Question 126 Multiple Choice**[Modify](#)[Remove](#)**Question** Extreme antisocial behavior has been correlated with damage to the**Answer**

- hippocampus.
- ✓ orbitofrontal cortex.
- primary visual cortex.
- corpus callosum.

[◀ Add Question Here](#)**Question 127 Multiple Choice**[Modify](#)[Remove](#)**Question** Your art teacher in high school was always telling the class that everyone could be an artist if they would just stop thinking with their left brain and let their right brain control their hands. Your teacher was wrong because**Answer**

- creativity is mediated by the right hemisphere.
- artistic ability is mediated by the left hemisphere.
- ✓ each hemisphere controls the contralateral hand, and the corpus callosum ensures continuous communication between the two hemispheres.
- there is no difference between the two hemispheres of the brain.

[◀ Add Question Here](#)**Question 128 Multiple Choice**[Modify](#)[Remove](#)**Question** Damage to which of the following areas results in problems producing speech?**Answer**

- ✓ Broca's area
- Wernicke's area
- the orbitofrontal cortex
- the cingulate cortex

[◀ Add Question Here](#)**Question 129 Multiple Choice**[Modify](#)[Remove](#)**Question** For the vast majority of the population, which of the following functions are localized to the left hemisphere?**Answer**

- ✓ language
- spatial abilities
- intuition
- artistic and musical abilities

[◀ Add Question Here](#)**Question 130 Multiple Choice**[Modify](#)[Remove](#)

**Question** Which of the following peripheral nerves enter and exit the brain itself?

**Answer**

- cervical
- thoracic
- ✓ cranial
- lumbar

◀ [Add Question Here](#)

Question 131 **Multiple Choice**

Modify

Remove

**Question** How many pairs of cranial nerves do humans have?

**Answer**

- 6
- 8
- 10
- ✓ 12

◀ [Add Question Here](#)

Question 132 **Multiple Choice**

Modify

Remove

**Question** Which of the cranial nerves provides input and feedback from the heart, liver, and digestive tract?

**Answer**

- the trochlear nerve (IV)
- the abducens nerve (VI)
- the hypoglossal nerve (XII)
- ✓ the vagus nerve (X)

◀ [Add Question Here](#)

Question 133 **Multiple Choice**

Modify

Remove

**Question** Which of the cranial nerves do we use to produce facial expressions?

**Answer**

- the trigeminal nerve (V)
- ✓ the facial nerve (VII)
- the trochlear nerve (IV)
- The spinal accessory nerve (XI)

◀ [Add Question Here](#)

Question 134 **Multiple Choice**

Modify

Remove

**Question** Which of the following statements accurately describes the ability of cranial nerves to carry sensory and motor information?

**Answer**

- Half of the cranial nerves carry sensory information and the other half of the cranial nerves carry motor information.
- All cranial nerves carry both sensory and motor information.
- Some cranial nerves carry just sensory information, while all of the others carry both sensory and motor information.
- ✓ Some cranial nerves carry sensory information, others carry motor information, and still others carry both sensory and motor information.

◀ [Add Question Here](#)

## Question 135 Multiple Choice

[Modify](#)  
[Remove](#)

**Question** Efferent spinal nerves exit the \_\_\_\_\_ root and carry \_\_\_\_\_ information.

**Answer**

- ventral; sensory
- ventral; motor
- dorsal; sensory
- ✓ dorsal; motor

[◀ Add Question Here](#)

## Question 136 Multiple Choice

[Modify](#)  
[Remove](#)

**Question** Damage to a mixed nerve is likely to produce impairments in \_\_\_\_\_ for a part of the body.

**Answer**

- ✓ both sensation and motor control
- sensation only
- motor control only
- neither sensation nor motor control

[◀ Add Question Here](#)

## Question 137 Multiple Choice

[Modify](#)  
[Remove](#)

**Question** Dorsal spinal ganglia

**Answer**

- are located in the ventral horns of the spinal cord.
- contain the cell bodies of efferent nerves.
- are located in the dorsal horns of the spinal cord.
- ✓ contain the cell bodies of afferent nerves.

[◀ Add Question Here](#)

## Question 138 Multiple Choice

[Modify](#)  
[Remove](#)

**Question** \_\_\_\_\_ spinal nerves are myelinated.

**Answer**

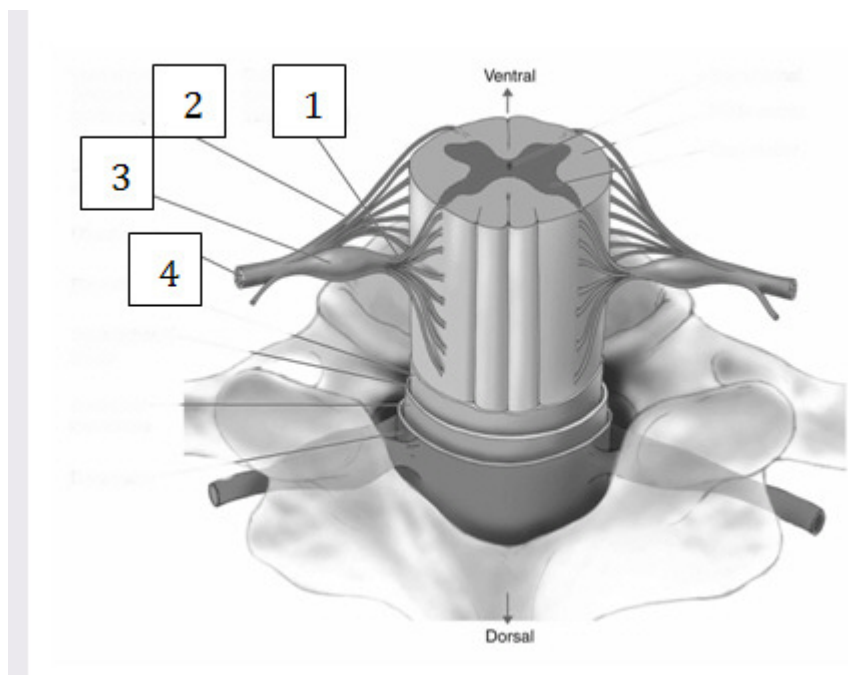
- All
- None of the
- ✓ All efferent
- All afferent

[◀ Add Question Here](#)

## Question 139 Multiple Choice

[Modify](#)  
[Remove](#)

**Question**



The structure designated "3" in this illustration

**Answer**

transmits efferent data from the central nervous system to muscles and glands.

✓ transmits afferent data from the periphery to the central nervous system.

is a mixed nerve, carrying both afferent and efferent data to and from the central nervous system.

is a sympathetic ganglion, and participates in autonomic arousal.

**Correct Feedback**

(see Figure 2.23)

**Incorrect Feedback**

(see Figure 2.23)

[Add Question Here](#)

Question 140 **Multiple Choice**

Modify

Remove

**Question** The dull, aching feeling that often follows injury is probably carried by \_\_\_\_\_ nerves.

**Answer**

myelinated efferent

unmyelinated efferent

myelinated afferent

✓ unmyelinated afferent

[Add Question Here](#)

Question 141 **Multiple Choice**

Modify

Remove

**Question** The autonomic nervous system directly controls

**Answer**

the skeletal muscles.

✓ the heart, lungs, and other organs.

the reticular formation.

temperature regulation.

[◀ Add Question Here](#)**Question 142 Multiple Choice**[Modify](#)[Remove](#)

**Question** Biofeedback training allows people to consciously control processes normally managed by the

**Answer**

- frontal lobe.
- reticular formation.
- somatic nervous system.
- ✓ autonomic nervous system.

[◀ Add Question Here](#)**Question 143 Multiple Choice**[Modify](#)[Remove](#)

**Question** Internal stimuli, such as the arrival of food in the digestive system, normally activate

**Answer**

- the somatic nervous system.
- ✓ the parasympathetic nervous system.
- the sympathetic nervous system.
- both the parasympathetic and sympathetic nervous systems.

[◀ Add Question Here](#)**Question 144 Multiple Choice**[Modify](#)[Remove](#)

**Question** The body's "fight or flight" response is managed by

**Answer**

- the somatic nervous system.
- the parasympathetic nervous system.
- ✓ the sympathetic nervous system.
- both the parasympathetic and sympathetic nervous systems.

[◀ Add Question Here](#)**Question 145 Multiple Choice**[Modify](#)[Remove](#)

**Question** Salivation and digestion are inhibited during activation of

**Answer**

- the somatic nervous system.
- the parasympathetic nervous system.
- ✓ the sympathetic nervous system.
- both the parasympathetic and sympathetic nervous systems.

[◀ Add Question Here](#)**Question 146 Multiple Choice**[Modify](#)[Remove](#)

**Question** Which of the following systems synapse on a chain of ganglia just outside the spinal cord?

**Answer**

- the somatic nervous system
- the parasympathetic nervous system
- ✓ the sympathetic nervous system
- both the parasympathetic and sympathetic nervous systems

[◀ Add Question Here](#)



## Question 147 Multiple Choice

Modify

Remove

**Question** Which of the following is a consequence of sympathetic nervous system activity?

- Answer**
- ✓ increased heart rate
  - increased digestion
  - increased salivation
  - decreased blood pressure

[◀ Add Question Here](#)

## Question 148 Multiple Choice

Modify

Remove

**Question** In the parasympathetic nervous system

- Answer**
- both pre- and post-ganglionic synapses use norepinephrine.
  - ✓ both pre- and post-ganglionic synapses use acetylcholine.
  - pre-ganglionic synapses use norepinephrine, and post-ganglionic synapses use acetylcholine.
  - pre-ganglionic synapses use acetylcholine, and post-ganglionic synapses use norepinephrine.

[◀ Add Question Here](#)

## Question 149 Multiple Choice

Modify

Remove

**Question** Sexual activity involves

- Answer**
- the parasympathetic nervous system only.
  - the sympathetic nervous system only.
  - ✓ both the parasympathetic and sympathetic nervous systems.
  - neither the parasympathetic nor the sympathetic nervous system.

[◀ Add Question Here](#)

## Question 150 Multiple Choice

Modify

Remove

**Question** Constriction of blood vessels near the skin's surface is a characteristic of activity in

- Answer**
- the somatic nervous system.
  - ✓ the sympathetic nervous system.
  - the parasympathetic nervous system.
  - both the sympathetic and parasympathetic nervous systems.

[◀ Add Question Here](#)

## Question 151 Multiple Choice

Modify

Remove

**Question** The neurons associated with the parasympathetic nervous system are located in the \_\_\_\_\_ of the spinal cord.

- Answer**
- lumbar and sacral divisions
  - thoracic and lumbar divisions
  - ✓ brain and sacral division
  - brain and lumbar division

[◀ Add Question Here](#)

## Question 152 Multiple Choice

Modify

Remove

**Question** The brain structure with the most direct responsibility over the autonomic nervous system is the

**Answer**

- amygdala.
- cingulate cortex.
- hippocampus.
- ✓ hypothalamus.

[◀ Add Question Here](#)

## Question 153 Multiple Choice

Modify

Remove

**Question** Which of the following statements offers the best definition of evolution?

**Answer** ✓ Evolution describes descent with modifications from a common ancestor.

- Evolution describes how humans evolved from chimpanzees.
- Evolution describes the origin of life from the big bang.
- Evolution describes the transmission of dominant and recessive traits to offspring.

[◀ Add Question Here](#)

## Question 154 Multiple Choice

Modify

Remove

**Question** Researchers studying two species of frogs found that one species seemed to be more numerous in ponds with lots of fishes whereas the other species was more numerous in ponds with relatively fewer fishes. Using your understanding of the evolutionary concept of fitness, choose the statement that best describes the situation.

**Answer**

- It is only a matter of time before one of these species becomes more numerous in both ponds because certain traits are reproduced more successfully than others regardless of environment.
- ✓ It is likely that the two species differ in a trait that makes one better suited to ponds with lots of fishes and one better suited to ponds with fewer fishes.
- Both species are likely to become extinct in the near future as neither can successfully cohabit with fishes.
- Over time the numbers of the two species will become more equal, regardless of the type of pond they inhabit.

[◀ Add Question Here](#)

## Question 155 Multiple Choice

Modify

Remove

**Question** Natural selection refers to the

**Answer**

- ability of farmers and breeders to develop animals with specific traits, such as fast horses and hairless Chihuahuas.
- ability to select embryos with certain characteristics during in vitro fertilization.
- ✓ success of one genotype relative to others due to fitness.
- dominance of genes for one trait, such as dark eye color, over another, such as blue eye color.

[◀ Add Question Here](#)

## Question 156 Multiple Choice

Modify

Remove

**Question** Why do some researchers believe that natural blonde hair will disappear as a natural trait within the next 200 years?

**Answer** People with blonde hair are more susceptible to many diseases, including cancer, limiting their ability to reproduce.  
People with blonde hair are less fertile than people with dark hair.  
Genes responsible for blonde hair are mutating at high rates.  
✓ Blonde hair is a recessive trait and social factors, such as mobility, may reduce the likelihood that pairs of individuals, both of whom have genes for blonde hair, will meet, mate, and reproduce.

◀ [Add Question Here](#)

Question 157 **Multiple Choice**

Modify

Remove

**Question** The first animals with simple nerve nets probably evolved about \_\_\_\_\_ years ago.

**Answer** 4.5 billion  
3.5 billion  
✓ 700 million  
250 million

◀ [Add Question Here](#)

Question 158 **Multiple Choice**

Modify

Remove

**Question** Animals with the first rudimentary brains probably evolved about \_\_\_\_\_ years ago.

**Answer** 4.5 billion  
3.5 billion  
700 million  
✓ 250 million

◀ [Add Question Here](#)

Question 159 **Multiple Choice**

Modify

Remove

**Question** The first somewhat human brain probably developed about \_\_\_\_\_ million years ago.

**Answer** 700  
250  
10  
✓ 4

◀ [Add Question Here](#)

Question 160 **Multiple Choice**

Modify

Remove

**Question** True brains and spinal cords occurred first in

**Answer** ✓ chordates.  
mollusca.  
crustacean.  
hemichordates.

[◀ Add Question Here](#)

## Question 161 Multiple Choice

Modify

Remove

**Question** Chordate nervous systems differ from nonchordate nervous systems in that

- Answer**
- ☐ chordate nervous systems run along the ventral side of the animal.
  - ☒ chordate nervous systems run along the dorsal side of the animal.
  - ☐ nonchordate nervous systems have brains rather than ganglia.
  - ☐ nonchordate nervous systems provide faster reactions to sensory information.

[◀ Add Question Here](#)

## Question 162 Multiple Choice

Modify

Remove

**Question** Among chordates, early brains have \_\_\_\_\_ than later developing brains.

- Answer**
- ☐ larger cerebellums
  - ☐ more convoluted cortices
  - ☐ larger olfactory bulbs
  - ☒ smaller cerebellums and less convoluted cortices

[◀ Add Question Here](#)

## Question 163 Multiple Choice

Modify

Remove

**Question** The first *Homo sapiens* appeared about \_\_\_\_\_ years ago.

- Answer**
- ☐ 4 million
  - ☐ 2 million
  - ☐ 300,000
  - ☒ 200,000

[◀ Add Question Here](#)

## Question 164 Multiple Choice

Modify

Remove

**Question** Human children can first recognize themselves in a mirror around the age of

- Answer**
- ☐ 6 months
  - ☒ 18 months
  - ☐ 2 years
  - ☐ 3 years

[◀ Add Question Here](#)

## Question 165 Multiple Choice

Modify

Remove

**Question** In addition to humans, which of the following animals appear to be able to recognize themselves in the mirror?

- Answer**
- ☐ all mammals
  - ☐ all monkeys and apes
  - ☒ chimpanzees, orangutans, and elephants
  - ☐ no other animals can recognize themselves in the mirror

[◀ Add Question Here](#)

## Question 166 Multiple Choice

Modify

Remove

**Question** Researchers attempting to locate the sense of self in the brain have suggested that

- Answer**
- their goal is impossible to achieve.
  - ✓ the frontal lobes probably participate in our sense of self.
  - the occipital and parietal lobes are essential for maintaining our sense of self.
  - the left hemisphere plays a dominant role in our sense of self.

[◀ Add Question Here](#)

## Question 167 Multiple Choice

Modify

Remove

**Question** The most accurate assessment of the relative intelligence of different species is the

- Answer**
- absolute weight of an animal's brain.
  - ratio of brain weight to body weight.
  - ✓ encephalization quotient.
  - cerebral quotient.

[◀ Add Question Here](#)

## Question 168 Multiple Choice

Modify

Remove

**Question** Brain development among hominid species

- Answer**
- ✓ occurred very quickly.
  - occurred very slowly and unevenly.
  - occurred very slowly and gradually.
  - has appeared to speed up in the last century.

[◀ Add Question Here](#)

## Question 169 Multiple Choice

Modify

Remove

**Question** Compared with early examples of *Homo sapiens*, modern humans have

- Answer**
- much larger brains.
  - smaller brains.
  - ✓ brains that are about the same size.
  - more convoluted brains.

[◀ Add Question Here](#)

## Question 170 Multiple Choice

Modify

Remove

**Question** Agriculture, urbanization, and literacy appear to have produced \_\_\_\_\_ in human brain size.

- Answer**
- large amounts of additional growth
  - modest amounts of additional growth
  - ✓ no apparent changes
  - possible reductions

[◀ Add Question Here](#)

## Question 171 Multiple Choice

Modify

Remove

**Question** Factors that may limit human brain size include

**Answer** the brain's requirements for calcium.  
gender differences in brain size.  
the brain's need for fatty acids.  
✓ difficulties in childbirth.

[◀ Add Question Here](#)

## Question 172 Multiple Choice

Modify

Remove

**Question** Among the possible reasons for the rapid growth of hominid brains is the fact that

**Answer** ✓ hominids enjoyed rich supplies of protein from meat, eggs, and seafood.  
the development of agriculture led to more stable food supplies.  
urbanization, or the development of cities, favored brains capable of more complex thinking.  
the development of literacy stimulated considerable brain growth.

[◀ Add Question Here](#)

## Question 173 True/False

Modify

Remove

**Question** True or false? The parietal lobes are found rostral to the occipital lobes and posterior to the frontal lobes.

**Answer** ✓ True  
False

[◀ Add Question Here](#)

## Question 174 True/False

Modify

Remove

**Question** True or false? The arachnoid layer of the meninges is found in both the central and peripheral nervous systems.

**Answer** True  
✓ False

[◀ Add Question Here](#)

## Question 175 True/False

Modify

Remove

**Question** True or false? Nerves originating in the lumbar division of the spinal cord serve the lower back and legs.

**Answer** ✓ True  
False

[◀ Add Question Here](#)

## Question 176 True/False

Modify

Remove

**Question** True or false? The reticular formation extends from the medulla through the pons and into the midbrain.

**Answer** ✓ True  
False

[◀ Add Question Here](#)Question 177 **True/False**

Modify

Remove

**Question** True or false? The amygdala participates in emotional behavior, and fear in particular.

**Answer**

✓ True

False

[◀ Add Question Here](#)Question 178 **True/False**

Modify

Remove

**Question** True or false? Primary auditory cortex is found in the parietal lobe of the cerebral cortex.

**Answer**

True

✓ False

[◀ Add Question Here](#)Question 179 **True/False**

Modify

Remove

**Question** True or false? Primary somatosensory cortex is located in the precentral gyrus of the frontal lobe.

**Answer**

True

✓ False

[◀ Add Question Here](#)Question 180 **True/False**

Modify

Remove

**Question** True or false? All cranial nerves carry both sensory and motor information to and from the brain.

**Answer**

True

✓ False

[◀ Add Question Here](#)Question 181 **True/False**

Modify

Remove

**Question** True or false? Neurons comprising the parasympathetic division of the autonomic nervous system are located in the brain and sacral divisions of the spinal cord.

**Answer**

✓ True

False

[◀ Add Question Here](#)Question 182 **True/False**

Modify

Remove

**Question** True or false? Within a species, brain size is strongly and positively correlated with an individual's intelligence.

**Answer**

True

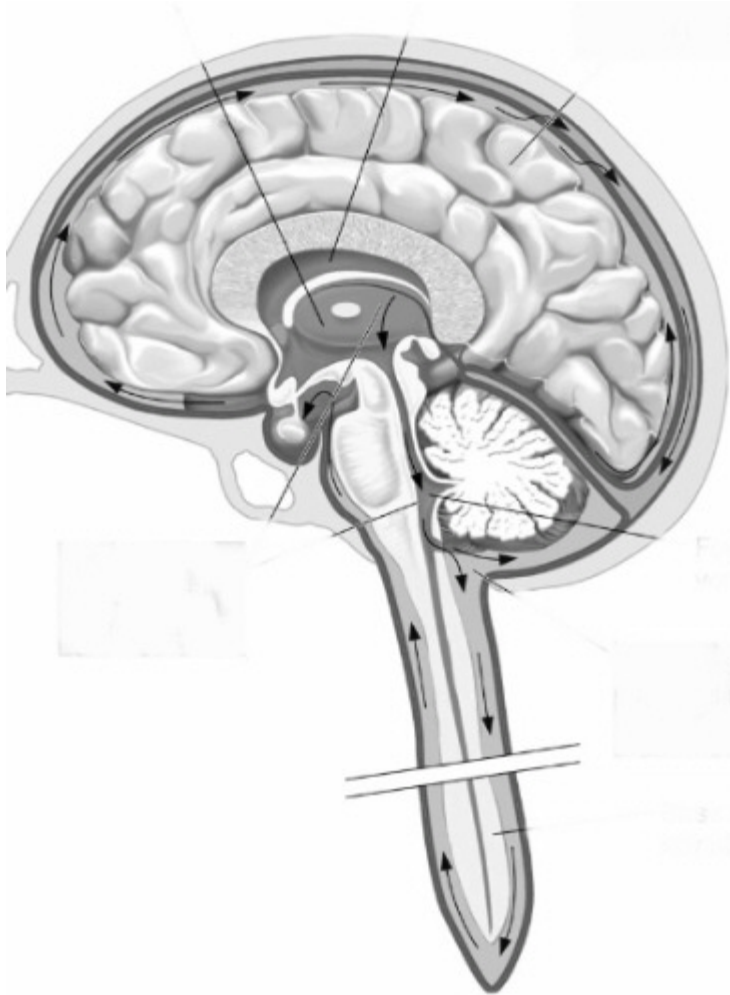
✓ False

[◀ Add Question Here](#)

## Question 183 Fill in the Blank

Modify

Remove

**Question**

In this illustration, cerebrospinal fluid is shown moving from its place of synthesis in the \_\_\_\_\_ of the ventricles, through the \_\_\_\_\_ of the spinal cord, and into the \_\_\_\_\_ within the meninges.

**Answer** choroid plexus, central canal, subarachnoid space  
(See Figure 2.5b).

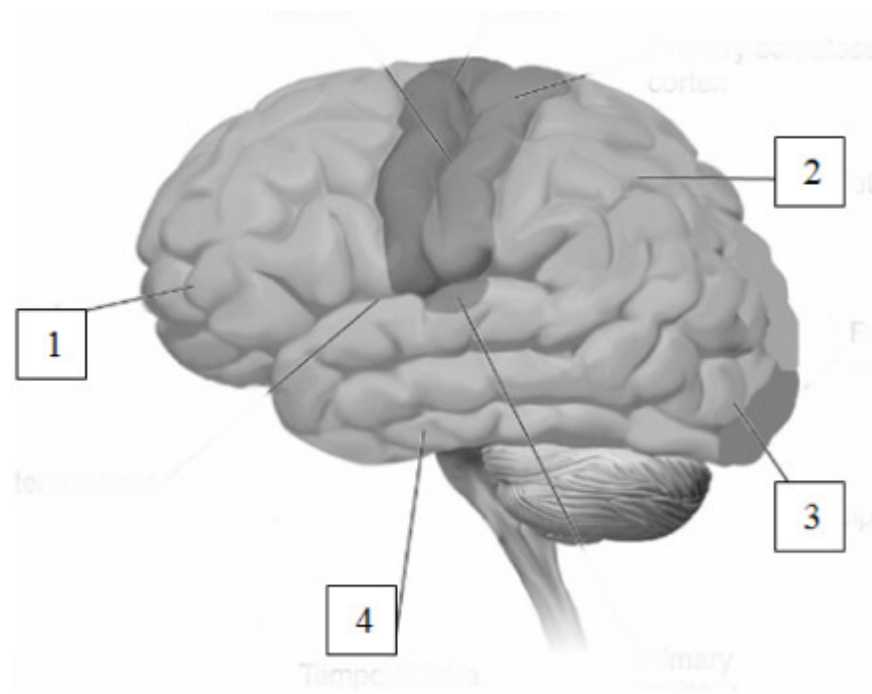
[◀ Add Question Here](#)

## Question 184 Fill in the Blank

Modify

Remove



**Question**

Fill in the names of the four lobes depicted in this figure:

Area 1: \_\_\_\_\_

Area 2: \_\_\_\_\_

Area 3: \_\_\_\_\_

Area 4: \_\_\_\_\_

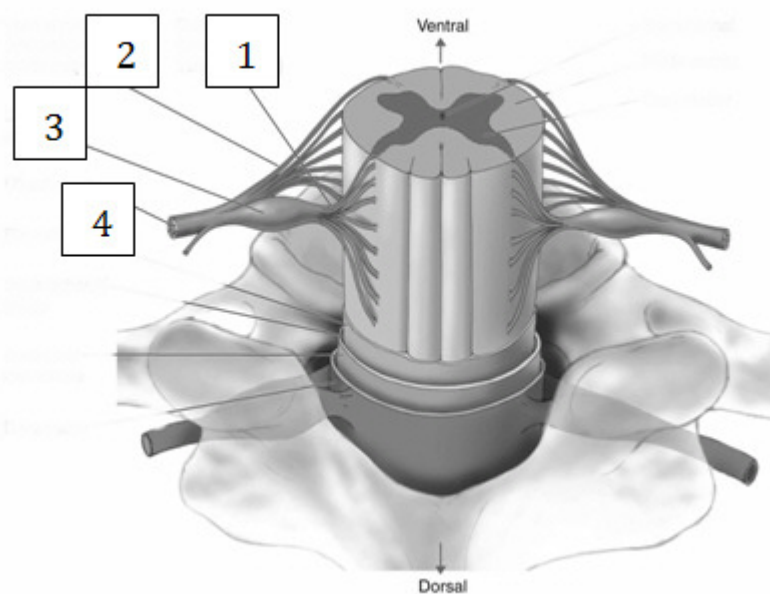
**Answer**                      frontal, parietal, occipital, temporal  
(see Figure 2.19)

[Add Question Here](#)

Question 185   **Fill in the Blank**

Modify

Remove

**Question**

The nerve fibers designated as "1" in this illustration carry \_\_\_\_\_ information, and the nerve fibers designated as "2" carry \_\_\_\_\_ information.

**Answer** sensory (afferent), motor (efferent)  
sensory, motor  
afferent, efferent  
(see Figure 2.23)

◀ [Add Question Here](#)

Question 186 **Essay**

Modify

Remove

**Question** What are the three major planes of sections used in neuroanatomy?

**Answer** Sagittal sections are parallel to the midline, coronal sections divide the brain from front to back, and horizontal sections divide the brain from top to bottom.

◀ [Add Question Here](#)

Question 187 **Essay**

Modify

Remove

**Question** What is the purpose of the cerebrospinal fluid?

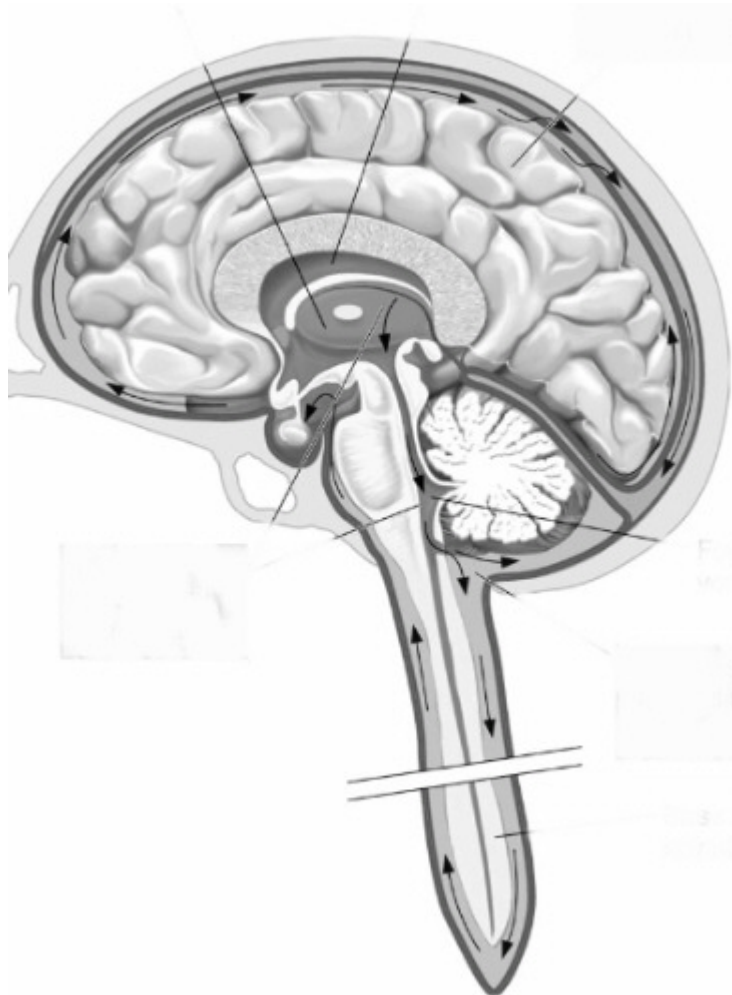
**Answer** Cerebrospinal fluid cushions the brain, minimizing damage in the event of head injury and preventing unwanted stimulation of neurons due to pressure.

◀ [Add Question Here](#)

Question 188 **Essay**

Modify

Remove



**Question**

Briefly describe the circulation of the cerebrospinal fluid, beginning with its synthesis and ending with its reabsorption.

**Answer**

Refer to Figure 2.5b.

 [Add Question Here](#)Question 189 **Essay**

Modify

Remove

**Question** What are the major functions of the spinal cord?**Answer** The spinal cord carries information to and from the brain and manages a variety of protective and movement reflexes. [Add Question Here](#)Question 190 **Essay**

Modify

Remove

**Question** Describe the major functions of the cerebellum.**Answer** The cerebellum traditionally has been viewed as contributing to motor coordination and balance, but it also appears to participate in higher level cognitive processing in humans. [Add Question Here](#)Question 191 **Essay**

Modify

Remove

**Question** What is the limbic system?**Answer** The limbic system is a collection of structures embedded within the forebrain that participate in learning, memory, and emotion. [Add Question Here](#)Question 192 **Essay**

Modify

Remove

**Question** What functions are primarily managed by the occipital lobe?**Answer** The occipital lobe is primarily involved with visual processing. [Add Question Here](#)Question 193 **Essay**

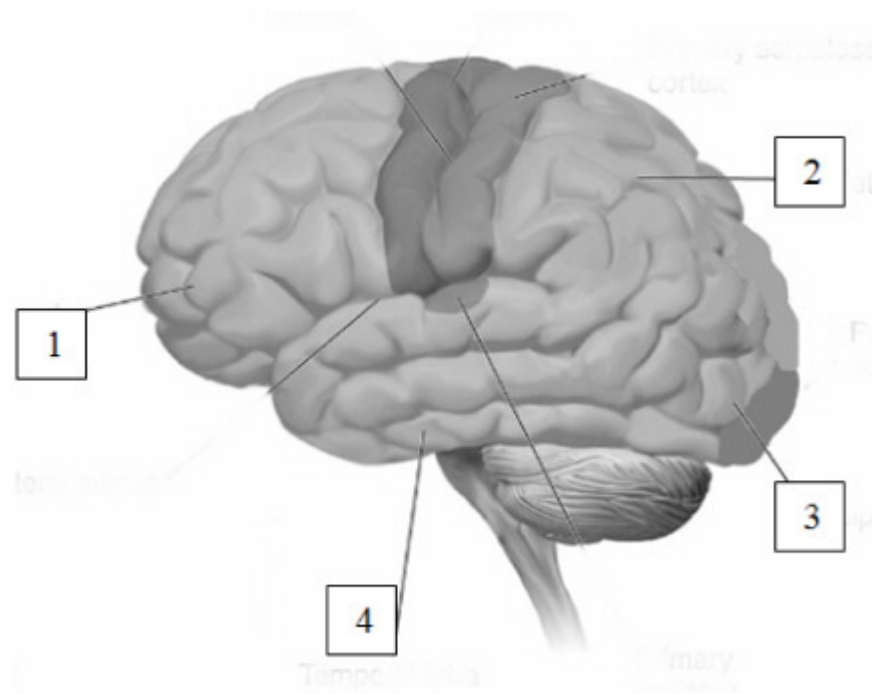
Modify

Remove

**Question** Define association cortex.**Answer** Association cortex does not have a designated role in the processing of either sensory or motor information. Instead, it provides bridges or connections between these two functions. [Add Question Here](#)Question 194 **Essay**

Modify

Remove

**Question**

Provide one example of a function that is localized to each of the four areas illustrated in this figure.

**Answer**

Refer to Figure 2.19)

[Add Question Here](#)

**Question 195 Essay**

Modify

Remove

**Question** Describe the functions of two of the cranial nerves.

**Answer** Various. Example: The olfactory nerve (Cranial N. 1) carries information from the olfactory neurons of the nose to the brain. The vagus nerve (Cranial N. 10) carries information both to and from various internal organs, including the heart, lungs, and digestive system.

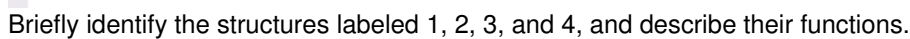
[Add Question Here](#)

**Question 196 Essay**

Modify

Remove

**Question**



Refer to Figure 2.23.

Remove

**Answer** The sympathetic nervous system is active during periods of arousal, stress, and emergency, and prepares the body for “fight-or-flight.” The parasympathetic nervous system is active during times of calm, and participates in the storage of nutrients and the repair of the body.

Remove

**Answer** The human brain has changed surprisingly little over the last 100,000 to 200,000 years, in spite of advances such as agriculture and literacy.

Remove

<b>Answer</b>	Answer not provided
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Remove

<b>Answer</b>	Answer not provided
---------------	---------------------

 [Add Question Here](#)Question 201 **Essay** Modify Remove

**Question** Stress usually involves higher-than-normal levels of sympathetic arousal. Given your understanding of the autonomic nervous system, what effects might extended sympathetic arousal produce?

**Answer**

Answer not provided

 [Add Question Here](#) OK