

# Activity I

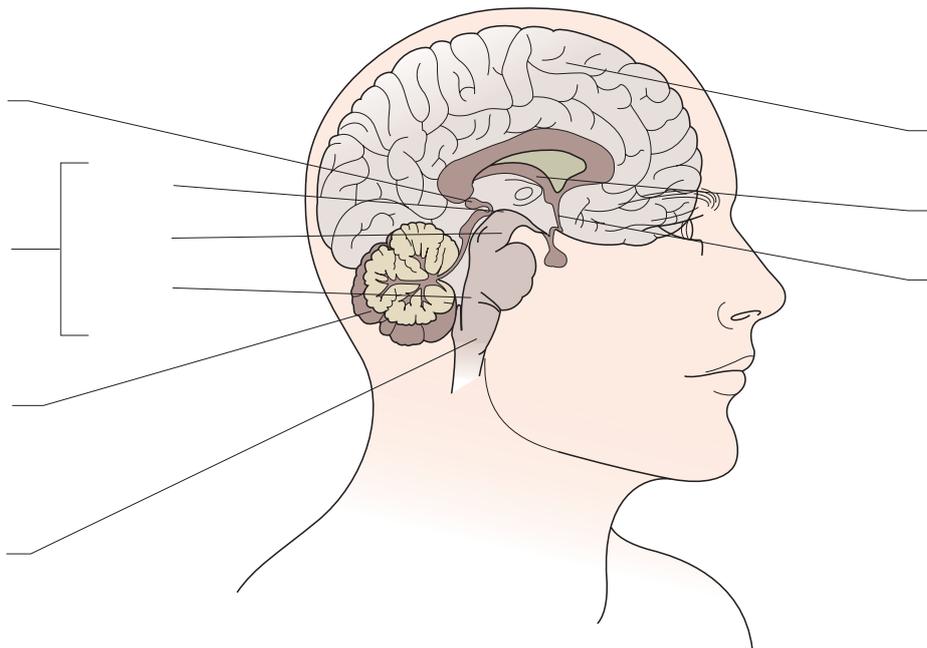
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Label the following diagram of the brain.

Medulla oblongata  
Cerebrum  
Midbrain  
Thalamus

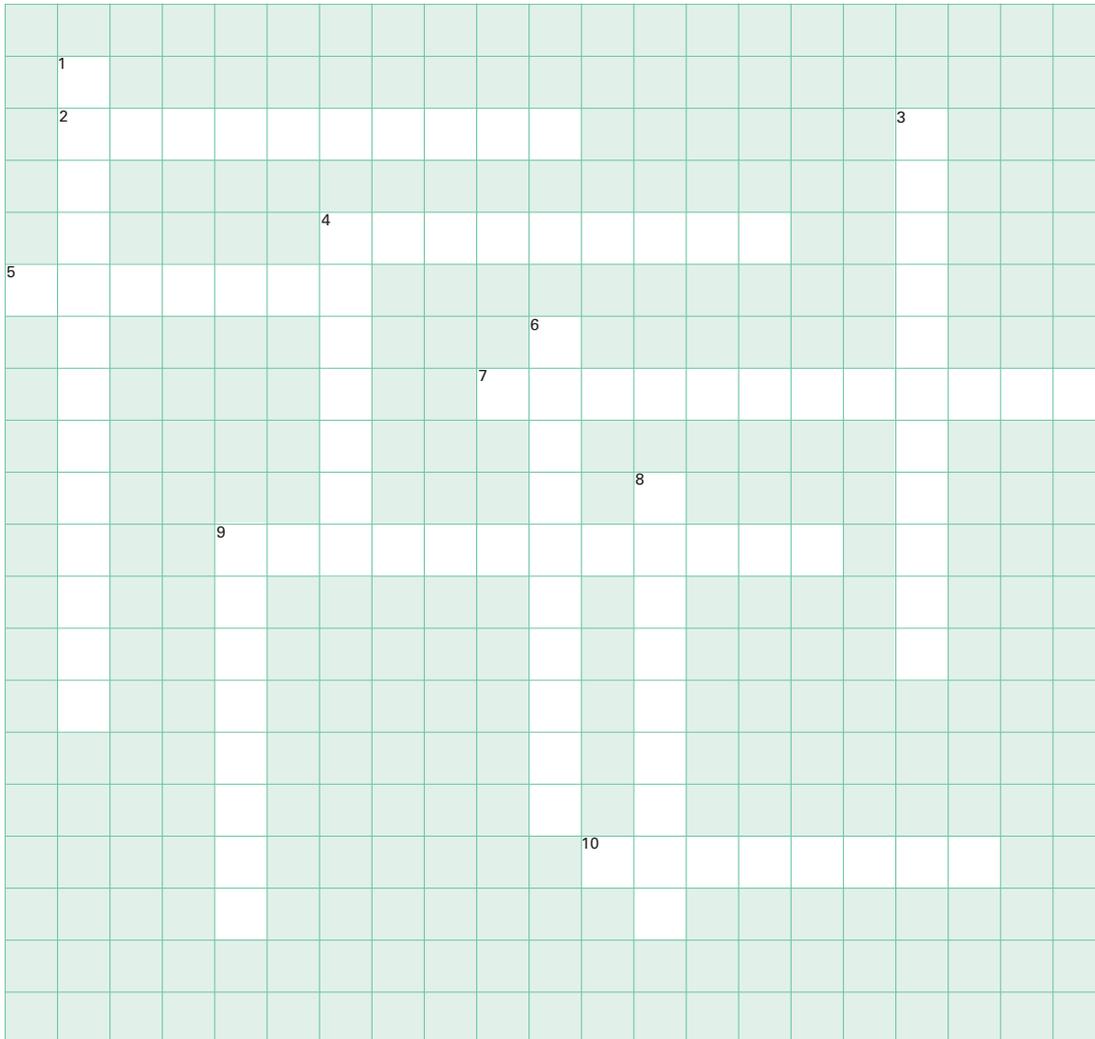
Hypothalamus  
Cerebellum  
Pons

Pineal gland  
Spinal cord  
Brain stem



# Activity 2

Complete the crossword.



## Across

2. cauliflower-shaped structure at posterior of cranium
4. connective tissue designed to support, nourish and protect neurones
5. junction where nerve impulses are transmitted from one neurone to another
7. rapid and automatic response to a stimulus (6, 6)
9. fatty insulating sheath covering axon of nerve cell (6, 6)
10. largest part of brain

## Down

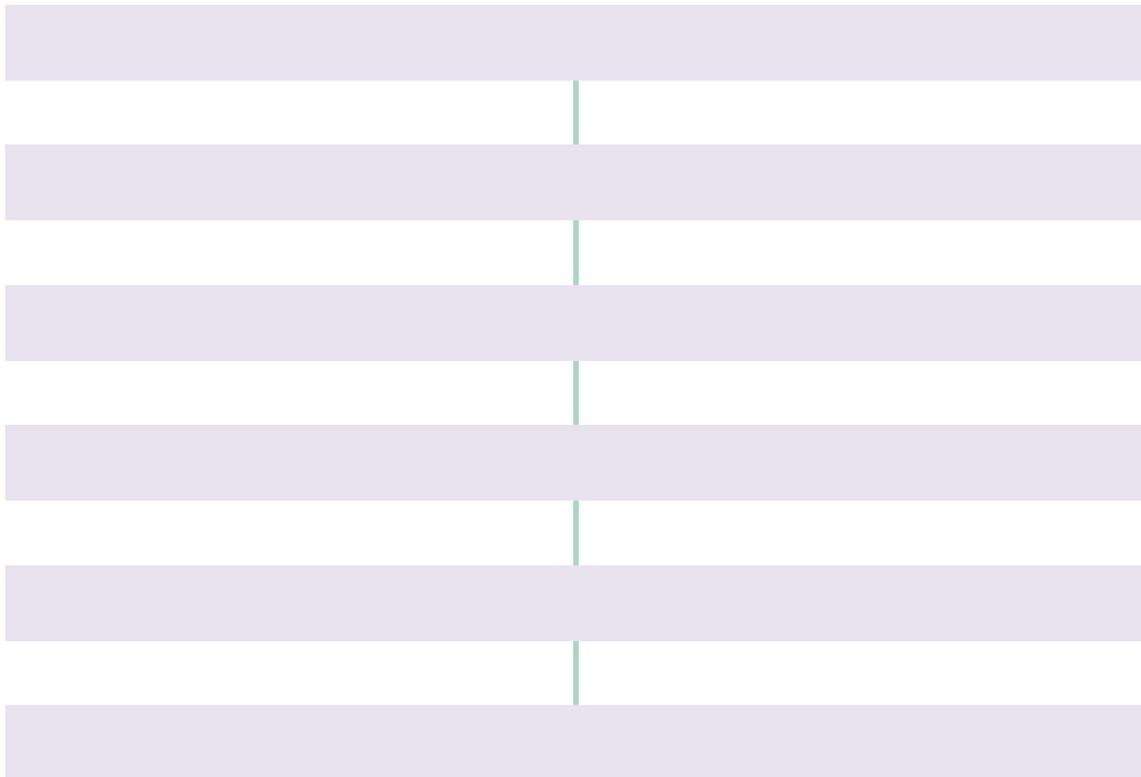
1. neurotransmitter vital to muscle contraction
3. part of nervous system that prepares body for emergency situations
4. impulse-conducting cell
6. disorder of seventh cranial nerve, resulting in paralysis on one side of face (6, 5)
8. highly branched extensions of a nerve cell
9. three connective tissue membranes covering brain and spinal cord

# Activity 3

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Sort the following into the correct order of the conduction of a motor impulse in the contraction of skeletal muscle.

- Chemical transmitter substance released across synapse
- Motor impulse initiated in brain
- Motor impulse reaches motor point of muscle fibres
- Motor stimuli travel along length of the axon to the effector, i.e. the muscle
- Muscle fibres contract and effect movement desired
- Nerve impulse is passed across the neuromuscular junction



# Activity 4

Match the key words to the definitions in the box.

Sympathetic  
Afferent

Trigeminal  
Trochlear

Myelin sheath  
Neuroglia

Spinal cord  
Dendrites

Thalamus  
Cerebellum

Key words	Definitions
	Another term for a sensory neurone
	Part of neurone that receives nerve impulse
	Insulating coating of axon
	Part of nervous system that slows down digestion
	Cells of the nervous system unable to transmit impulses
	Part of brain that is a relay and interpretation centre for all sensory impulses, apart from olfaction
	Part of brain concerned with the coordination of skeletal muscle and balance
	Relays impulses (motor and sensory) to and from the brain
	A mixed cranial nerve that controls muscles of mastication
	Smallest of the cranial nerves

# Activity 5

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Complete the following by filling in the blanks with the words listed below.

adrenal	dilates	increased	sleep
autonomic	emergency	parasympathetic	slows
cardiac	gastrointestinal	respiration	smooth
constriction	genito-urinary	rest	sweat
decreases	glands	resting	sympathetic
digestion	heart	saliva	ventilation

The \_\_\_\_\_ nervous system controls the automatic body activities of \_\_\_\_\_ and \_\_\_\_\_ muscle and the activities of \_\_\_\_\_.

It is divided into the sympathetic and parasympathetic divisions, which possess complementary responses.

The \_\_\_\_\_ system prepares the body for expending energy and dealing with \_\_\_\_\_ situations.

It increases the \_\_\_\_\_ and \_\_\_\_\_ rate, \_\_\_\_\_ skeletal blood vessels, stimulates the \_\_\_\_\_ and \_\_\_\_\_ glands, dilates the pupils, \_\_\_\_\_ the secretion of saliva, and decreases \_\_\_\_\_ activity.

The \_\_\_\_\_ nervous system works to conserve energy and create the conditions needed for \_\_\_\_\_ and \_\_\_\_\_.

It \_\_\_\_\_ down the body processes except \_\_\_\_\_ and the functions of the \_\_\_\_\_ system.

Its effects include \_\_\_\_\_ the heart and \_\_\_\_\_ rate, \_\_\_\_\_ of skeletal blood vessels, \_\_\_\_\_ gastrointestinal activity, contraction of the bladder, pupil constriction and stimulation of \_\_\_\_\_.

## Multiple-choice questions – Student book, p229

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- 1. The nervous system is divided into two major divisions:**
  - a) central nervous system and peripheral nervous system
  - b) central nervous system and autonomic nervous system
  - c) the brain and the spinal cord
  - d) the peripheral nervous system and the brain
- 2. The components of the central nervous system include**
  - a) the spinal cord and cranial nerves
  - b) the sympathetic and parasympathetic nervous systems
  - c) the brain and spinal cord
  - d) the cranial and spinal nerves
- 3. The three basic parts of a neurone are**
  - a) cell body, sensory and afferent nerves
  - b) cell body, nucleus and axon
  - c) cell body, axon and dendrites
  - d) cell body, motor and efferent nerves
- 4. A sensory nerve is responsible for sending messages**
  - a) from the brain and spinal cord
  - b) to and from the brain and spinal cord
  - c) to the brain and spinal cord
  - d) none of the above
- 5. The part of the brain that houses the thalamus and hypothalamus is the**
  - a) cerebrum
  - b) brain stem
  - c) cerebellum
  - d) medulla oblongata
- 6. The region of the brain concerned with the coordination of skeletal muscle is**
  - a) cerebellum
  - b) pons
  - c) midbrain
  - d) cerebrum
- 7. The part of the brain concerned with all forms of conscious activity is**
  - a) cerebrum
  - b) thalamus
  - c) hypothalamus
  - d) medulla oblongata
- 8. The connective tissue membranes that envelop the central nervous system are**
  - a) cerebrospinal membranes
  - b) meninges
  - c) myelin sheaths
  - d) synapses
- 9. The part of the brain that contains vital control centres for the heart, lungs and intestines is**
  - a) hypothalamus
  - b) midbrain
  - c) medulla oblongata
  - d) cerebellum
- 10. The junction where nerve impulses are transmitted from one neurone to another is a**
  - a) neurotransmitter
  - b) synapse
  - c) dendrite
  - d) axon
- 11. The point where the nerve supply enters the muscle is the**
  - a) motor impulse
  - b) motor transmitter
  - c) motor point
  - d) muscle fibre
- 12. The spinal cord is an extension of which part of the brain?**
  - a) pons
  - b) medulla oblongata
  - c) midbrain
  - d) brain stem

**13. Which of the following statements is TRUE?**

- a) Sensory neurones receive stimuli from sensory organs and receptors and transmit the impulses to the spinal cord and brain
- b) Motor neurones conduct impulses to the brain and spinal cord and to the muscles and glands
- c) Association neurones link motor neurones together
- d) Axons receive and transmit stimuli away from the cell body

**14. Which of the following is NOT one of the cranial nerves?**

- a) trigeminal
- b) facial
- c) cervical
- d) optic

**15. The effects of the parasympathetic nervous system are**

- a) resting heart rate
- b) increased gastrointestinal activity
- c) pupil constriction
- d) all of the above