1. Sensations and Responses

Let us assess

1. Question

The part of the brain which helps to maintain body balance.

A. Cerebrum

B. Cerebellum

C. Medulla oblongata

D. Thalamus

Answer

The cerebellum is at the back of the brain, below the cerebrum. Its size is $1/8^{th}$ of Cerebrum. But it's a very important part of the brain. It controls balance, movement, and coordination (how your muscles work together). Because of your cerebellum, you can stand upright, keep your balance, and move around.

Whenever a person consumes alcohol the first part of the brain to be affected is one’s cerebellum. That’s why a person loses its control after drinking.

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2 B. Question

Identify the relation and fill in the blank.

Irregular flow of charge in the brain: Epilepsy

Answer

Epilepsy is a disease which causes the irregular flow of the charge in the brain.

Epilepsy is a neurological disorder in nerve cell activity is disturbed causing sudden recurrent episodes of sensory disturbance. Due to this a person experiences abnormal behavior, symptoms, and sensations, sometimes including loss of consciousness. . Epilepsy may occur as a result of a genetic disorder or an acquired brain injury, such as a trauma or stroke. Epilepsy is usually treated by medication and in some cases by surgery, devices or dietary changes.

2 B. Question

Identify the relation and fill in the blank.

Decreased production of dopamine: ----------

Answer

Parkinson's disease.

Dopamine is a neurotransmitter, a chemical that facilitates transmission of signals between brain cells, or neurons, by binding to neuron receptors. The chemical is involved in controlling emotions, pleasure, movement and incoming information. Dopamine is considered as one of the feel-good neurotransmitters.

Parkinson's disease is a degenerative disease that is associated with a breakdown of dopamine-releasing neurons. Dopamine is involved in everything from cognition and mood to the ability to regulate body movements. If the amount of dopamine in the cells is too low, it can affect muscle control. The lack of dopamine can cause slow movement and muscular paralysis.

3 A. Question

Analyze the following instances and answer the questions.

• a thorn accidentally pierces the foot

• the leg is withdrawn.

• the thorn is taken out slowly.

Write the stimuli and responses.

Answer

Thorn accidentally pierces the foot is stimuli and leg withdrawn is a response to stimuli.

Stimuli - Anything you can think of that you can recognize by touch, thought or action. It can be auditory, visual or mixed. As the thorn pierces the leg we feel the pain in our leg. This is stimuli.

Responses- The reaction to the above stimuli. It could be motor or control responses in our brain that we may be aware or unaware of. When we feel the pain we withdraw our leg. This is a response.

3 B. Question

Analyze the following instances and answer the questions.

• a thorn accidentally pierces the foot

• the leg is withdrawn.

• the thorn is taken out slowly.

Which is the conscious response?

Answer

Removal of thorn is a conscious response

Conscious responses to stimuli occur when a person is awake and aware that s/he is responding. They are making a conscious decision to respond.

3 C. Question

Analyze the following instances and answer the questions.

• a thorn accidentally pierces the foot

• the leg is withdrawn.

• the thorn is taken out slowly.

Was the leg withdrawn after sensing the pain? Which action took place there? Prepare an illustration showing the parts through which the impulses transmitted.

Answer

Yes it was a motor response to withdraw leg. Withdrawal reflex or spinal reflex took place here. Withdrawn of the leg after sensing pain is withdrawal reflex. The withdrawal reflex (flexor withdrawal reflex) is a spinal reflex intended to protect the body from damaging stimuli.

Illustration showing the parts through which the impulses transmitted