



[PHY2011 S1 2024](#) / Topic 5B Reflexes (Do I understand the content? - Practice Quiz)

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Time taken	1 min 6 secs
Grade	12.00 out of 12.00 (100%)

Question 1

Correct

Mark 1.00 out of 1.00

Which of the following is CORRECT?

Select one:

- ☐ a. Interneurons in the spinal cord can usually work independently from descending inputs from the brainstem.
- ☐ b. The interneurons involved in spinal reflexes are all located in the ventral horn.
- ☐ c. The interneurons involved in spinal reflexes are all located in the dorsal root ganglionventral horn.
- ☐ d. Neurones in the mesencephalic locomotor region send long axons that drive the muscles directly, via neuromuscular synapses.
- ☒ e. Neurones in the mesencephalic locomotor region send axons that influence, directly or indirectly, the spinal interneurons, thereby determining the rhythm of locomotion. ✓

The correct answer is: Neurones in the mesencephalic locomotor region send axons that influence, directly or indirectly, the spinal interneurons, thereby determining the rhythm of locomotion.

Question 2

Correct

Mark 1.00 out of 1.00

Reflex actions of the Group IA fibres to muscle spindles include

Select one:

- ☐ a. Inhibition of motor neurons of synergist muscles.
- ☐ b. Excitation of motor neurons of antagonist muscles.
- ☐ c. Inhibition of homonymous motor neurons.
- ☐ d. Generation of the dull persisting pain following a painful stimulus to a muscle, like cramps
- ☒ e. Inhibition of motor neurons of antagonist muscles. ✓

The correct answer is: Inhibition of motor neurons of antagonist muscles.

Question 3

Correct

Mark 1.00 out of 1.00

A tap below the knee or at the back of the ankle elicits the tendon jerk or phasic stretch reflex. Which ONE of the following statements about that reflex is INCORRECT?

Select one:

- ☐ a. It is possible to evoke this reflex by a brisk but light tap to the tendon of the muscle, which then responds with a contraction.
- ☐ b. The reflex can be evoked in postural muscles.
- ☒ c. It is a reflex response to afferent impulses of tendon organs lying in the tendon being tapped. ✓
- ☐ d. This reflex involves a chain of two neurons.
- ☐ e. This reflex forms the basis for current views about the mechanism of posture.

The correct answers are: It is a reflex response to afferent impulses of tendon organs lying in the tendon being tapped., This reflex forms the basis for current views about the mechanism of posture.

Question 4

Correct

Mark 1.00 out of 1.00

The phasic stretch reflex or tendon jerk in response to a tendon tap

Select one:

- ☐ a. Is the result of the excitation of tendon organs lying in the tendon being tapped.
- ☐ b. Is triggered by the brief shortening applied to the muscle as a result of the tendon tap.
- ☐ c. Is initiated by the command centre in the brain.
- ☒ d. Is the result of excitation of the primary endings of muscle spindles by the brief stretch applied to the tendon. ✓
- ☐ e. Is a purely muscle mechanical response and does not require an intact nerve supply.

The correct answer is: Is the result of excitation of the primary endings of muscle spindles by the brief stretch applied to the tendon.

Question 5

Correct

Mark 1.00 out of 1.00

A flexor reflex

Select one:

- ☒ a. May be produced by noxious stimulation of the skin. ✓
- ☐ b. Is always accompanied by relaxation of antagonist extensor muscles in the contralateral limb.
- ☐ c. Is present only if pathways to the brain remain intact.
- ☐ d. Involves only two neurones.
- ☐ e. Is restricted in its action to a myotactic unit - all of the muscle acting at a single joint.

The correct answer is: May be produced by noxious stimulation of the skin.

Question 6

Correct

Mark 1.00 out of 1.00

The setting of the gain or 'stiffness' of spinal reflexes is largely a function of

Select one:

- ☐ a. Group Ia afferents
- ☐ b. Renshaw cells
- ☐ c. Ib inhibitory neurons
- ☒ d. Descending (upper) motor neurons ✓
- ☐ e. Group II afferents

The correct answer is: Descending (upper) motor neurons

Question 7

Correct

Mark 1.00 out of 1.00

The stretch reflex

Select one:

- ☐ a. Is monosynaptic and mediated by type II afferents innervating nuclear chain spindles
- ☐ b. Is disynaptic and mediated by Ib afferents innervating nuclear chain and nuclear bag spindles
- ☐ c. Is disynaptic and mediated by Ib afferents innervating golgi tendon organs
- ☐ d. Is monosynaptic and mediated by type II afferents innervating golgi tendon organs
- ☒ e. Is monosynaptic and mediated by Ia afferents innervating nuclear bag and nuclear chain spindles ✓

The correct answer is: Is monosynaptic and mediated by Ia afferents innervating nuclear bag and nuclear chain spindles

Question 8

Correct

Mark 1.00 out of 1.00

The purpose of alpha-gamma coactivation is

Select one:

- ☐ a. enable the spinal cord to adjust the gain in reflex pathways during motor performance
- ☒ b. ensure that spindle afferents remain sensitive to small changes in muscle length ✓
- ☐ c. ensure that muscle lengthening is the same as muscle shortening
- ☐ d. ensure that spindle afferents are activated at the same time as tendon organ afferents
- ☐ e. ensure that extrafusal and intrafusal fibers are the same length

The correct answer is: ensure that spindle afferents remain sensitive to small changes in muscle length

Question 9

Correct

Mark 1.00 out of 1.00

Which of the following is **LEAST** likely to involve a reflex action?

Select one:

- ☐ a. Adjustment of muscle tension for a sudden change in muscle load
- ☐ b. Change in blood pressure at onset of exercise
- ☐ c. Withdrawal of the hand after touching a hot stove
- ☐ d. Maintaining a seated (upright) posture
- ☒ e. Change in blood flow to the muscles at onset of exercise ✓

The correct answer is: Change in blood flow to the muscles at onset of exercise

Question 10

Correct

Mark 1.00 out of 1.00

The main function of the Ia inhibitory neuron is

Select one:

- ☐ a. Inhibit Ia afferent terminals
- ☐ b. Inhibit inhibit Renshaw cells
- ☒ c. Inhibit antagonist motor neurons ✓
- ☐ d. Inhibit agonist motor neurons
- ☐ e. Inhibit synergist motor neurons

The correct answer is: Inhibit antagonist motor neurons

Question 11

Correct

Mark 1.00 out of 1.00

Current view of the autogenic inhibitory reflex is that it

Select one:

- ☒ a. Prevents development of excessive tension in the muscle ✓
- ☐ b. Enables equal sharing of a load across all the motor units of a muscle
- ☐ c. Inhibits the withdrawal reflex
- ☐ d. Decreases the rate of contraction of a muscle
- ☐ e. Inhibits the stretch reflex

The correct answer is: Prevents development of excessive tension in the muscle

Question 12

Correct

Mark 1.00 out of 1.00

A likely cause of spasticity that develops following an upper motor neuron lesion is

Select one:

- ☒ a. increased alpha-gamma co-activation ✓
- ☐ b. increased sensitivity of golgi tendon organs
- ☐ c. decreased activity of Ia inhibitory neurons
- ☐ d. increased activity in Renshaw cells
- ☐ e. decreased muscle length

The correct answer is: increased alpha-gamma co-activation