

Written Q

1. As regard stretch reflex : mention receptor , afferent , centre , efferent , significance?
2. Compare () static and dynamic stretch reflex?
3. Compare () stretch reflex and lengthening reaction ?
4. Enumerate significance of stretch reflex ?
5. Compare () stretch reflex and flexion withdrawal reflex ?
6. Def ms tone ? and its significance ?

Formative MCQ

<p>7. Inverse stretch reflex:</p> <p>a) increases the possibility of avulsion of the excessively stretched muscle from its bony attachments</p> <p>b) has no reciprocal innervation circuits</p> <p>c) is clinically manifested by lengthening reaction</p> <p>d) is clinically tested by examining the tendon jerks</p>	<p>C</p>
<p>8. The shortest reflex time is recorded with:</p> <p>a) a flexor withdrawal reflex</p> <p>b) an inverse stretch reflex</p> <p>c) a stretch reflex</p> <p>d) a scratch reflex</p>	<p>C</p>
<p>9. Static stretch reflex is:</p> <p>a) Polysynaptic</p> <p>b) Inhibited by vestibular nuclus</p> <p>c) Stimulated by red nuclus</p> <p>d) The base of ms tone</p> <p>e) Base of tendon jerk</p>	<p>D</p>

<p>10. Nuclear bag fibers of the muscle spindle:</p> <ul style="list-style-type: none"> a) Have expanded central part. b) Contain a chain of nuclei. c) Are thin and short. d) Are numerous in number. e) Have both 1ry and 2ry afferent nerve endings 	A
<p>11. Output signals from Golgi tendon organs are transmitted to the following higher center:</p> <ul style="list-style-type: none"> a) Inferior colliculus. b) Globus pallidus. c) Cerebellum. d) Red nucleus. e) Substantia nigra 	C
<p>12. Which of the following reflexes is correctly paired with the sensory structure that mediates the reflex?</p> <ul style="list-style-type: none"> a) Flexion withdrawal reflex - muscle spindle. b) Reciprocal inhibition - Golgi tender organ. c) Reciprocal inhibition -Pacinian corpuscle. d) Stretch reflex - ms pindle. e) Golgi tendon reflex – Meissner corpuscle. 	D
<p>13. The inverse stretch reflex:</p> <ul style="list-style-type: none"> a) Has a lower threshold than the stretch Reflex. b) Is a monosynaptic reflex. c) Is a disynaptic reflex with a single interneuron inserted between the afferent and efferent limbs. d) Is a polysynaptic reflex with many interneurons inserted between the afferent and efferent limbs. e) Requires the discharge of central neurons that release acetylcholine. 	C

<p>14. Co-activation of α and γ - motor neurons:</p> <ul style="list-style-type: none"> a) Increases γ - motor neuron discharge whenever the activity of α- motor neurons rises to a high level. b) Is mediated by interneurons that link the α and γ -motor neurons c) Maintains the proprioceptive information to higher centers during muscle contraction. d) Increase the α neuron discharge whenever the activity of γ - motor neurons rises to a high level e) causes contraction of the muscle to become jerky and irregular 	<p>C</p>
<p>15. Gamma motor neuron to muscle spindle:</p> <ul style="list-style-type: none"> a) Supplies the central receptor areas of intrafusal muscle fibers. b) Supplies the extrafusal muscle fibers. c) Constitute pathway through which higher centers can affect Stretch reflex. d) Constitutes the efferent for stretch reflex. e) Constitutes the afferent for stretch reflex 	<p>C</p>
<p>16. When a muscle is suddenly stretched, a signal is transmitted over Ia sensory fibers from muscles spindles. Which of the following statements best describes the response elicited by these spindle afferent signals?</p> <ul style="list-style-type: none"> a) Contraction of the muscle in which the active spindles are located. b) Relaxation of the muscle in which the active spindles are located. c) Contraction of the muscle antagonistic to those in which the active spindles are located. d) Relaxation of intrafusal fibers in the active spindles. e) Direct synaptic activation of gamma neurons. 	<p>A</p>

<p>17. Nuclear bag fibers in muscle spindle:</p> <ul style="list-style-type: none"> a) Slowly responding. b) Slowly adapting. c) Rapidly responding. d) Connected to secondary ending. e) Responsible for static stretch reflex. 	C
<p>18. Skeletal muscle tone:</p> <ul style="list-style-type: none"> a) Is a voluntary act. b) Keeps posture against gravity. c) Increases if the muscle shortens. d) All of the above are correct. e) Only a and b are correct. 	B
<p>19. In the patellar tendon reflex, which of the following items will synapse directly on alpha motor neurons that innervate the muscle being stretched?</p> <ul style="list-style-type: none"> A) Ia sensory fiber B) Ib sensory fiber C) Excitatory interneurons D) Gamma motor neurons E) Inhibitory interneurons 	A

Other MCQ

<p>1. Which of the following items is the type of neuron whose axon forms synaptic junctions with the skeletal muscle cells (extrafusal fibers) that comprise the major part of a muscle?</p> <p>a) Alpha motor neurons. b) Pyramidal neurons. c) Gamma motor neurons. d) Granule cells. e) Purkinje cells.</p>	A
<p>2. Primary ending from muscle spindle:</p> <p>a) discharge when muscle stretch is maintained. b) explain alpha – gamma coactivation. c) is the afferent for dynamic stretch reflex. d) is the afferent for static stretch reflex. e) is the afferent for muscle tone.</p>	C
<p>3. Static stretch reflex is:</p> <p>a) the base of tendon jerk. b) stimulated by red nucleus. c) a polysynaptic reflex. d) inhibited by vestibular nucleus. e) the base of muscle tone.</p>	E
<p>4. Static stretch reflex is:</p> <p>a) responsible for tendon jerk. b) transmitted through primary ending only. c) initiated at nuclear chain intrafusal fibers. d) initiated at nuclear bag intrafusal fibers. e) initiated by neocerebellum.</p>	C

<p>5. Dynamic stretch reflex:</p> <ul style="list-style-type: none"> a) has secondary ending as an afferent. b) has alpha neuron as an afferent. c) is the mechanism of muscle tone. d) has gamma motor neuron as an efferent. e) a & c are correct. 	B
<p>6. The dynamic stretch reflex:</p> <ul style="list-style-type: none"> a) is the basis of muscle tone. b) its receptor is nuclear chain. c) is mediated through stimulation of the secondary nerve endings. d) shows rapid contraction of the muscle followed by rapid relaxation. e) is maintained as long as the stretching of the muscle is maintained. 	D
<p>7. Muscle tone:</p> <ul style="list-style-type: none"> a) is less in antigravity muscles. b) decreases venous return. c) is based on the static stretch reflex. d) is characterized by fatigue. e) is based on the dynamic stretch reflex. 	C
<p>8. The nuclear chain fibers of spindles are innervated by:</p> <ul style="list-style-type: none"> a) Aα and AB nerve fibers b) AB and nerve fibers c) Ia and II nerve fibers d) only type II nerve fibers 	C
<p>9. Whenever the position of a joint is stabilized at a certain attitude, the nervous system produces this by:</p> <ul style="list-style-type: none"> a) increasing a motor neuron discharge to all muscles attached to joint b) increasing gamma motor neuron discharge to all muscles attached to joint 	D

<p>c) <i>increasing motor neuron discharge to postural muscles</i></p> <p>d) <i>co-activation of alpha and gamma motor neurons innervating the involved muscles</i></p>	
<p>10. When a skeletal muscle is suddenly stretched:</p> <p>a) <i>it relaxes suddenly</i></p> <p>b) <i>it develops a static stretch</i></p> <p>c) <i>it develops a dynamic stretch reflex</i></p> <p>d) <i>it develops clonic contractions</i></p>	C
<p>11. A tendon jerk:</p> <p>a) <i>is a dynamic stretch reflex</i></p> <p>b) <i>is a static stretch reflex</i></p> <p>c) <i>is evoked by gradually stretching the muscle</i></p> <p>d) <i>is evoked by stimulation of tendon receptors</i></p>	A
<p>12. About the inverse reflex it is true to say that it:</p> <p>a) <i>Requires the discharge of central neurons that release GABA</i></p> <p>b) <i>Has a lower threshold than the stretch reflex.</i></p> <p>c) <i>Is a polysynaptic reflex containing many interneurons</i></p> <p>d) <i>Has a smaller central delay than that of the stretch reflex.</i></p> <p>e) <i>Is a di-synaptic reflex (having a single interneuron)</i></p>	E
<p>13. The muscle spindles:</p> <p>a) <i>Contain intra-fusal muscle fibers the central parts of which are contractile</i></p> <p>b) <i>Primary endings arise from the nuclear bag fibers only</i></p> <p>c) <i>Secondary endings are responsible for the dynamic stretch reflex</i></p> <p>d) <i>Primary endings give rise to afferent fibers of about 8 microns in diameter</i></p> <p>e) <i>Detect changes in the length of muscles</i></p>	E

<p>14. The major difference between the golgi tendon organs the muscle spindles is that:</p> <ul style="list-style-type: none"> a) The former are more sensitive than the later b) The former detect the amount while the latter detect rate of movement. c) The former initiate facilitatory reflexes while the latter initiate inhibitory reflexes d) The former detect changes in the muscle tension while the latter detect changes in the muscle length. 	D
<p>15. Which of the following cells receives direct synaptic input from Golgi tendon organs?</p> <ul style="list-style-type: none"> a) Type Ia inhibitory interneurons b) Dynamic gamma motor neurons c) Alpha motor neurons d) Type Ib inhibitory intemeurons e) Type II excitatory intemeurons 	D
<p>16. Which of the following activities will increase the sensitivity of the stretch reflex?</p> <ul style="list-style-type: none"> a) Cutting the dorsal root fibers associated with the muscle in which the stretch reflex is being examined b) Increasing the activity of the medullary reticular nuclei c) Bending the head forward d) Enhanced activity in the fusimotor (gamma motor neuron) system e) Stimulating the lateral hemispheres of the cerebellum 	D
<p>17. In the patellar tendon reflex, which of the following items will synapse directly on alpha motor neurons that innervate the muscle being stretched?</p> <ul style="list-style-type: none"> a) Ia sensory fiber b) Ib sensory fiber c) Excitatory interneurons 	A

<p>d) <i>Gamma motor neurons</i></p> <p>e) <i>Inhibitory interneurons</i></p>	
<p>18. Which reflex is responsible for monosynaptic excitation of ipsilateral homonymous muscle?</p> <p>a) <i>Stretch reflex (myotatic)</i></p> <p>b) <i>Golgi tendon reflex (inverse myotatic)</i></p> <p>c) <i>Flexor withdrawal reflex</i></p> <p>d) <i>Subliminal occlusion reflex</i></p>	A
<p>19. Which of the following is a characteristic of nuclear bag fibers?</p> <p>a) <i>They are one type of extrafusal muscle fiber</i></p> <p>b) <i>They detect dynamic changes in muscle length</i></p> <p>c) <i>They give rise to group Ib afferents</i></p> <p>d) <i>They are innervated by alpha motor neurons</i></p>	B