

Memory Test - Nervous System_Class Test_Online_Foundation_1

Total Mark: 100

Time: 90 Min

<p>1. A property shared by</p> <p>A) Skeletal and cardiac muscle is their striated microscopical appearance</p> <p>B) Skeletal and multiunit smooth muscle is that they are paralysed when their motor nerves are cut</p> <p>C) Cardiac and visceral smooth muscle is their spontaneous activity when denervated</p> <p>D) Skeletal and cardiac ventricular muscle is their stable resting membrane potential</p> <p>E) All varieties of muscle is that contraction strength is related to their initial length</p> <p>Answer: T, T, T, T, T</p> <p>Discussion:</p> <p>Reference: (Ref: Rodde 6th/Q-297)</p>	<p>2. Functions of different neurotransmitters-</p> <p>A) Glutamate plays role in learning & memory</p> <p>B) Serotonin affects mood, hunger, sleep</p> <p>C) Lack of glycine causes insomnia</p> <p>D) Excess of GABA results in seizure & tremor</p> <p>E) Dopamine influence movement, emotion</p> <p>Answer: T, T, F, F, T</p> <p>Discussion:</p> <p>Reference: (Ref: Guyton 13th/P-563-564)</p>
<p>3. Generalized sympathetic activity is characterized by</p> <p>A) Contraction of the radial muscle in the iris</p> <p>B) Increased urinary excretion of catecholamines</p> <p>C) Lipolysis in adipose tissue</p> <p>D) Decreased conduction rate in the atrio-ventricular bundle</p> <p>E) Relaxation of sphincteric smooth muscle in the alimentary tract</p> <p>Answer: T, T, T, F, F</p> <p>Discussion: Explanation: d) It increases and the PR interval shortens; higher heart rates are made possible. e) Sympathetic activity inhibits most smooth muscle in gut but contracts the sphincters.</p> <p>Reference: (Ref: Rodde 6th/Q-287)</p>	<p>4. Nerve fibre types and their functions-</p> <p>A) A-α fibre carries touch, pressure, vibration sense</p> <p>B) A-β fibre carries temperature, deep pain sense</p> <p>C) B fibres are autonomic & most sensitive to local anaesthetic</p> <p>D) C fibres are preganglionic autonomic</p> <p>E) Conduction velocity is highest in A-α fibre</p> <p>Answer: T, F, F, F, F</p> <p>Discussion:</p> <p>Reference: (Ref: Ganong 25th/P-94)</p>
<p>5. Neurones serving conscious muscle proprioception</p> <p>A) Conduct impulses at a similar rate to somatic motor neurones</p> <p>B) Have their cell bodies in the ipsilateral posterior horn of the spinal cord</p> <p>C) Use a different pathway from the primary neurones serving unconscious proprioception</p> <p>D) Synapse with secondary neurones whose axons project up the ipsilateral posterior (dorsal) columns of the spinal cord</p> <p>E) Synapse with neurones which cross the midline of the body in the brainstem</p> <p>Answer: T, F, T, F, T</p> <p>Discussion: b) They are in the posterior root ganglion d) The primary neurone axons pass up the ipsilateral posterior columns before synapsing with secondary neurones at the top of the spinal cord</p> <p>Reference: (Ref: Rodde 6th/Q-280)</p>	<p>6. Parasympathetic nerves</p> <p>A) Have opposite effects to sympathetic nerves on intestinal smooth muscle</p> <p>B) Have opposite effects to sympathetic nerves on iris smooth muscle.</p> <p>C) Cause vasodilatation in skeletal muscle during prolonged exercise</p> <p>D) Cause sweat secretion in skin when body temperature rises</p> <p>E) Have longer postganglionic than preganglionic fibres</p> <p>Answer: T, F, F, F, F</p> <p>Discussion: Explanation: b) Both contract iris smooth muscle; however parasympathetics constrict the pupil by contracting circular muscle, sympathetics dilate it by contracting radial muscle. c) Skeletal muscle has no parasympathetic nerve supply; local metabolites are responsible for the vasodilatation d) Skin has no parasympathetic innervation; sympathetic cholinergic nerves are responsible for the increase in sweating when body temperature rises e) The reverse is the case</p> <p>Reference: (Ref: Rodde 6th/Q-278)</p>

<p>7. Regarding muscle spindles A) Sense lengthening of the muscle B) Provide the efferent side of the stretch reflex C) Initiate monosynaptic reflex D) Initiate polysynaptic reflex E) Protective muscle contraction Answer: T, F, T, F, T Discussion: Reference: [Davidson 23rd /P-1068]</p>	<p>8. Regarding the blood brain barrier A) It is not present in the posterior pituitary B) It is impermeable to glucose C) Lipid soluble drugs can pass through it easily D) It is formed by tight junctions between capillary endothelial cells & astrocyte foot plates E) Bilirubin passes it to deposit in the basal ganglia Answer: T, F, T, T, T Discussion: Reference: (Ref: Ganong 25th/P-604-606)</p>
<p>9. Sensation carried out by lateral spinothalamic tract A) Light touch (Cruole) B) Pressure sensation C) Tickling & itching D) Temperature E) Sexual Sensation Answer: F, F, T, T, T Discussion: Reference: [Ref: Snell 7th /P-151]</p>	<p>10. An inhibitory post-synaptic potential A) May be recorded in a post-ganglionic sympathetic neurone B) May be recorded in an anterior horn motor neurone C) Does not exceed one millivolt in amplitude D) Moves membrane potential towards the equilibrium potential for potassium E) May summate in space and time with other excitatory and inhibitory potentials in the same neurone Answer: F, T, F, T, T Discussion: Reference:</p>
<p>11. CBF (Cerebral blood flow) increases when cpp is within 50 to 150 mmHg A) Viscosity of blood decreased B) \square PaO₂ C) \square Pa CO₂ D) \square H⁺ Cone E) \square Venous pressure Answer: F, F, F, F, F Discussion: Exp: CBF is constant when CPP is within 50 to 150 this is called autoregulation Reference: [Ref: Guyton 13th /P-787, Ganong 25th /P-607]</p>	<p>12. Features of upper motor neuron lesion A) Absent superficial reflex B) Absent deep tendon reflex C) Spastic paralysis D) No clonus E) Babinski sign positive Answer: T, F, T, F, T Discussion: Reference: [Ref: Snell neuroanatomy 7th/P- 168]</p>
<p>13. Functions of B type fiber A) Touch B) Pressure C) Proprioception D) Somatic motor E) pain Answer: T, T, F, F, F Discussion: Reference: (Ref: Ganong 25th/P-94)</p>	<p>14. Functions of tracts of Gall & Burdach are as follows A) Two-point discrimination B) Stereogenesis C) Joint sense D) Vibration sense E) Unconscious kinesthesia Answer: T, T, T, T, F Discussion: Reference: (Ref: Snell Neuroanatomy 7th/P-143)</p>
<p>15. Limbic system consist of A) Ant. Thalamic nucleus B) Basal ganglia C) Fornix D) Cingulate Gyrus E) Amygdaloid nucleus Answer: T, F, F, T, T Discussion: Reference: [Ref: Snell neuroanatomy 7th/P-307,311]</p>	<p>16. Nerve fibres continue to conduct impulses when A) Extracellular sodium is replaced by potassium B) Extracellular sodium is replaced by a non-diffusible cation C) Temperature is lowered from 37 to 30°C D) Temperature is lowered to below 0°C provided freezing does not occur E) The sodium-potassium pump is inactivated Answer: F, F, T, F, T Discussion: Explanation: a) This would depolarize the fibres completely. b) Influx of cations is essential for depolarization. d) Nerve fibres stop conducting before tissue freezing occurs Reference: (Ref: Rodde 6th/Q-282)</p>

<p>17. Neurotransmitter of basal ganglia A) Dopamine B) Glycine C) Glutamate D) Acetylcholine E) Somatostatin Answer: T, F, T, T, T Discussion: Reference: [Ref: Ganong 25th/P-244, Ref: Snell neuroanatomy 7th/P406]</p>	<p>18. Non-myelinated axons differ from myelinated axons in that they are A) Not sheathed in Schwann cells B) Not capable of regeneration after section C) Found only in the autonomic nervous system D) Less excitable E) Refractory for a longer period after excitation Answer: F, F, F, T, T Discussion: Reference: (Ref: Rodde 6th/Q-290/P-125)</p>
<p>19. Regarding autonomic neurotransmitter- A) Preganglionic sympathetic neurotransmitter is norepinephrine B) Ach from preganglionic neuron binds with Muscarinic receptor C) Sympathetic postganglionic nerve in skeletal blood vessel release epinephrine D) Ach on nicotinic receptor generate fast EPSP E) Ach on muscarinic receptor generate slow IPSP Answer: F, F, F, T, T Discussion: Reference: (Ref: Ganong 25th/P-260)</p>	<p>20. Resting nerve cell membranes are more permeable to A) Organic anions than to Cl₋ anions B) K₊ ions than to Cl₋ ions C) Na₊ ions than to K₊ ions D) Oxygen molecules than to glucose molecules E) Water molecules than to H₊ ions Answer: F, F, F, T, T Discussion: a) Organic anions cannot cross the membrane readily b) The permeability to Cl₋ is about twice that to K₊ c) K₊ permeability is about 100 times that of Na₊ Reference: (Ref: Rodde 6th/Q-291)</p>
<p>21. Spinal lemniscus is formed by A) Lateral spinothalamic tract B) Anterior spinothalamic tract C) Spino-olivary tract D) Spinotectral tract E) Spinoreticular tract Answer: T, T, F, T, F Discussion: Reference: (Ref: Snell 7th/P-147-149)</p>	<p>22. Transection to the spinal cord at C6 level will produce A) Immediate spastic paralysis of the extremities B) Diaphragmatic breathing only C) Urinary retention D) Paralytic ileus E) Exaggerated knee jerks Answer: T, F, F, F, T Discussion: Reference: (Ref: Vision 8th/P-540)</p>
<p>23. What happens when ICP is elevated to > 33 mmHg over a short period cerebra blood flow is significantly reduced & ischemia develops A) Bradycardia B) Tachycardia C) Blood pressure raises D) Blood pressure decrease E) Respiration slowed Answer: T, F, T, F, T Discussion: Reference: [Ref: Oxford handbook of clinical neurology 2nd /p-129+ Vision 8th /P-141-166]</p>	<p>24. Which one are correctly paired A) Meissner's corpuscle – two point discrimination B) Free nerve ending –pain touch pressure C) Ruffians corpuscle □touch D) Pacinical corpuscle – Pressure and vibration E) Neusomuscular Answer: T, T, F, T, T Discussion: Reference: [Ref: Snell 7th /P-115]</p>
<p>25. Which one Correct regrading post lumbar punecture headache A) Younger Male are more Affected B) Younger Female are more affected C) Ocurr in 10-30% of patient D) Headache usually begins after 24 hour E) Most patients resolve completely within a week Answer: F, T, T, T, T Discussion: Reference: [Ref: Oxford handbook of neurology 2nd/P-388]</p>	<p>26. A 16 months old girl presented with convulsion & fever, on examination you found babinski's sign positive. Which factor responsible for this.. A) Immature ventral corticospinal tract B) Immature reticulospinal tract C) Immature rubrospinal tract D) Immature lateral corticospinal tract E) Immature vestibulospinal tract Answer: D Discussion: Reference:</p>

<p>27. A 22-year-old man complaining of headache, nausea and feeling of being unwell for 2 days was seen in the Accident and Emergency Department. He was intolerant to bright light and sounds. Lumbar puncture performed by the on call consultant showed glucose < 40> 4.5 mg/dl and neutrophil leukocytosis. What is the most likely diagnosis?</p> <p>A) Cervical tumour B) Cerebral malaria C) Encephalitis D) Intracerebral haemorrhage E) Meningitis</p> <p>Answer: E Discussion: Reference: (Ref: Pastest/Q-7.15)</p>	<p>28. A 32-year-old woman experienced the sudden onset of a severe cramping pain in the abdominal region. She also became nauseated. Visceral pain</p> <p>A) Shows relatively rapid adaptation B) Is mediated by B fibers in the dorsal roots of the spinal nerves C) Is poorly localized D) Resembles “fast pain” produced by noxious stimulation of the skin E) Causes relaxation of nearby skeletal muscles</p> <p>Answer: C Discussion: Reference: (Ref: Gangon 25th/P-175)</p>
<p>29. A 40 years old man came to you with loss of facial expression on Rt. half on face loss of wrinkling of forehead on Rt, loss of taste. Loss of lacrimation hyperaquisis. What is the possible diagnosis?</p> <p>A) Supranuclear lesion of facial nerve B) Supranuclear lesion of vestibular nerve C) Nuclear lesion of vestibulo cochlear nerve D) Infranuclear lesion just below nerve to stapedius E) Nuclear or infranuclear lesion above the geniculate ganglion</p> <p>Answer: E Discussion: Reference: (Ref: Snells Neuroanatomy 7th/P168)</p>	<p>30. A 40-year-old man loses his right hand in a farm accident. Four years later, he has episodes of severe pain in the missing hand (phantom limb pain). A detailed PET scan study of his cerebral cortex might be expected to show</p> <p>A) Expansion of the right hand area in his right primary somatosensory cortex B) Expansion of the right hand area in his left primary somatosensory cortex C) A metabolically inactive spot where his hand area in his left primary somatosensory cortex would normally be D) Projection of fibers from neighboring sensory areas into the right hand area of his right primary somatosensory cortex. E) Projection of fibers from neighboring sensory areas into the right hand area of his left primary somatosensory cortex.</p> <p>Answer: E Discussion: Reference: (Ref: Gangon 25th/P-176)</p>
<p>31. A 50-year-old woman undergoes a neurologic exam that indicates loss of pain and temperature sensitivity, vibratory sense, and proprioception in the left leg. These symptoms could be explained by</p> <p>A) A tumor on the right medial lemniscal pathway in the sacral spinal cord B) A peripheral neuropathy C) A tumor on the left medial lemniscal pathway in the sacral spinal cord D) A tumor affecting the right posterior paracentral gyrus E) A large tumor in the right lumbar ventrolateral spinal cord</p> <p>Answer: D Discussion: Reference: (Ref: Gangon 25th/P-176)</p>	<p>32. A lesion of the posterior column—medial lemniscus system is most likely to affect:</p> <p>A) Fine touch B) Hearing C) Pain sensation D) Temperature sensation E) Visual acuity</p> <p>Answer: A Discussion: Reference: (Ref: Pastest/Q-7.12)</p>

33. A middle-aged patient following a stroke developed dysarthria, nystagmus and a tremor that worsens with directed movement. This patient most probably has:

- A) Cerebellar disease
- B) Damage to pontine and caudate nuclei
- C) Hyperthyroidism
- D) Parkinsonism
- E) Spinal cord transection

Answer: A

Discussion: Cerebellar diseases The patient in this vignette has cerebellar tremor as suggested by the signs and symptoms. Cerebellar tremor is a slow, broad tremor of the extremities that A Fine touch The posterior column—medial lemniscus pathway is the sensory pathway responsible for transmitting fine touch and conscious proprioceptive information from the body to the cerebral cortex. The name comes from the two structures that the sensation travels up: the posterior (or dorsal) columns of the spinal cord and the medial lemniscus in the brainstem. Because the posterior columns are also called dorsal columns, the pathway is often called the dorsal column—medial lemniscus system or DCML for short. (Also called posterior column—medial lemniscus or PCML pathway). Discriminative sensation is well developed in the fingers of humans and allows us to feel fine textures and determine what an unknown object in our hands is without looking at it. This fine sensation is detected by Meissner's corpuscles that lie in the dermis of the skin close to the epidermis. When these structures are stimulated by slight pressure, an action potential is started. The action potential travels up an axon (the cell body of the neurone will be in a dorsal root ganglion). (The neurones are classified as unipolar, so they are regarded as having just one long process, an axon.) Therefore, the sensation travels from the skin, along the axon, past the neuronal cell body and into the dorsal column of the spinal cord. The axons continue inside the spinal cord, running up the posterior (dorsal) column. Axons from the lower body are most medial (closer to the midline) and run in the gracile tract of the spinal column. Sensory axons from the upper body enter the spinal cord later, so are more lateral and travel up the cuneate tract. At the level of the closed medulla oblongata, these axons synapse with neurones in the gracile and cuneate nuclei. The secondary neurones (that start in the nuclei) cross over to the other side of the medulla (as internal arcuate fibres) to form the medial lemniscus. At the medulla, the medial lemniscus is orientated perpendicular to the way the fibres travelled in the posterior columns. For example, in the columns, lower limb is medial, upper limb is more lateral. At the medial lemniscus, axons from the leg are more ventral, arm fibres more dorsal. Fibres from the trigeminal nerve (supplying the head) come in dorsal to the arm fibres and travel up the lemniscus too. The medial lemniscus rotates 90 degrees at the pons. The secondary axons from neurones giving sensation to the head stay at around the same place, while the leg axons move outwards. The axons travel up the rest of the brainstem and synapse at the thalamus (at the ventral posterolateral nucleus). Neurones starting in the thalamus travel up the posterior limb of the internal capsule, and again, head and leg swap relative positions. The axons synapse in the primary sensory cortex, with lower body sensation most medial (eg, the paracentral lobule) and upper body more lateral.

Reference:

34. A person met with an accident and the fracture of the 10th thoracic vertebra was found. It had damaged the left half of the spinal cord. Following clinical signs are seen in the patient on examination below the level of lesion.

- A) Ipsilateral loss of pain
- B) Ipsilateral loss of total sensation
- C) Contralateral spastic paralysis
- D) Ipsilateral flaccid paralysis
- E) Ipsilateral Babinski's sign is present

Answer: E

Discussion:

Reference: (Ref: Snells Neuroanatomy 7th/P-169)

<p>35. Complete transection of the spinal cord at the level of T1 would most likely result in</p> <p>A) temporary loss of stretch reflexes below the lesion B) temporary loss of conscious proprioception below the lesion C) permanent loss of voluntary control of movement above the lesion D) permanent loss of consciousness above the lesion E) None of the above</p> <p>Answer: A</p> <p>Discussion: Transection of the spinal cord causes “spinal shock” and loss of all reflexes below the level of the lesion. These reflexes, which are local circuits within the spinal cord, will return with time or become hypersensitive. Proprioception is permanently (rather than temporarily) lost because of the interruption of sensory nerve fibers. Fibers above the lesion are intact</p> <p>Reference: (Ref: BRS Physiology 6th [III E 2])</p>	<p>36. Cutting which structure on the left side causes total blindness in the left eye?</p> <p>A) Optic nerve B) Optic chiasm C) Optic tract D) Geniculocalcarine tract E)</p> <p>Answer: A</p> <p>Discussion: Explanation: Cutting the optic nerve from the left eye causes blindness in the left eye because the fibers have not yet crossed at the optic chiasm.</p> <p>Reference:</p>
<p>37. During a neurological examination, a patient exhibited extension of his toes when the plantar surface of his foot was stroked. An additional neurological finding might be:</p> <p>A) Atrophy B) Fasciculations C) Hyporeflexia D) Hypotonia E) Spasticity</p> <p>Answer: E</p> <p>Discussion:</p> <p>Reference: [Ref: Ganong 25th ed , page: 233, clinical box: 12-2]</p>	<p>38. In case of raised intracranial pressure. Which nerve most commonly affected?</p> <p>A) 3rd B) 5th C) 6th D) 7th E) 8th</p> <p>Answer: C</p> <p>Discussion:</p> <p>Reference: [Ref: Ganong/25th/P-607]</p>
<p>39. Muscle stretch leads to a direct increase in firing rate of which type of nerve?</p> <p>A) □-Motoneurons B) □-Motoneurons C) Group Ia fibers D) Group Ib fibers E) Group-II fibres</p> <p>Answer: C</p> <p>Discussion: Group Ia afferent fibers innervate intrafusal fibers of the muscle spindle. When the intrafusal fibers are stretched, the group Ia fibers fire and activate the stretch reflex, which causes the muscle to return to its resting length</p> <p>Reference: (Ref: BRS Physiology 6th [III B 3 b])</p>	<p>40. Nociceptors</p> <p>A) Are activated by strong pressure, severe cold, severe heat, and chemicals B) Are absent in visceral organs C) Are specialized structures located in the skin and joints D) Are innervated by group II afferents E) Are involved in acute but not chronic pain</p> <p>Answer: A</p> <p>Discussion:</p> <p>Reference: (Ref: Gangon 25th/P-175)</p>
<p>41. Parkinsonism is a known disorder of motor function. The primary area involved in this disease is:</p> <p>A) Basal ganglia B) Motor cortex C) Neostriatum D) Red nucleus E) Substantia nigra</p> <p>Answer: E</p> <p>Discussion:</p> <p>Reference: (Ref: Pastest/Q-7.5)</p>	<p>42. Sensory receptor potentials</p> <p>A) are action potentials B) always bring the membrane potential of a receptor cell toward threshold C) always bring the membrane potential of a receptor cell away from threshold D) are graded in size, depending on stimulus intensity E) are all-or-none</p> <p>Answer: D</p> <p>Discussion: Receptor potentials are graded potentials that may bring the membrane potential of the receptor cell either toward (depolarizing) or away from (hyperpolarizing) threshold. Receptor potentials are not action potentials, although action potentials (which are all-or-none) may result if the membrane potential reaches threshold</p> <p>Reference: (Ref: BRS Physiology 6th [II A 4 c])</p>

<p>43. The inability to perform rapidly alternating movements (dysidiadochokinesia) is associated with lesions of the</p> <p>A) Premotor cortex B) Motor cortex C) Cerebellum D) Substantia nigra E) Medulla</p> <p>Answer: C</p> <p>Discussion: Coordination of movement (synergy) is the function of the cerebellum. Lesions of the cerebellum cause ataxia, lack of coordination, poor execution of movement, delay in initiation of movement, and inability to perform rapidly alternating movements. The premotor and motor cortices plan and execute movements. Lesions of the substantia nigra, a component of the basal ganglia, result in tremors, lead-pipe rigidity, and poor muscle tone (Parkinson's disease)</p> <p>Reference: (Ref: BRS Physiology 6th [III F 1 c, 3 c])</p>	<p>44. Which autonomic receptor is blocked by hexamethonium at the ganglia, but not at the neuromuscular junction?</p> <p>A) Adrenergic α receptors B) Adrenergic α_1 receptors C) Adrenergic α_2 receptors D) Cholinergic muscarinic receptors E) Cholinergic nicotinic receptors</p> <p>Answer: E</p> <p>Discussion: The answer is E [I C 2 a]. Hexamethonium is a nicotinic blocker, but it acts only at ganglionic (not neuromuscular junction) nicotinic receptors. This pharmacologic distinction emphasizes that nicotinic receptors at these two locations, although similar, are not identical.</p> <p>Reference:</p>
<p>45. Which of the following has a much lower concentration in the cerebrospinal fluid (CSF) than in cerebral capillary blood?</p> <p>A) Na⁺ B) K⁺ C) Osmolarity D) Protein E) Mg²⁺</p> <p>Answer: D</p> <p>Discussion:</p> <p>Reference: (Ref: BRS Physiology 6th/ [V B; Table 2-9])</p>	<p>46. Which reflex is responsible for polysynaptic excitation of contralateral extensors?</p> <p>A) Stretch reflex (myotatic) B) Golgi tendon reflex (inverse myotatic) C) Flexor withdrawal reflex D) Subliminal occlusion reflex E) Crossed extensor reflex</p> <p>Answer: C</p> <p>Discussion: Flexor withdrawal is a polysynaptic reflex that is used when a person touches a hot stove or steps on a tack. On the ipsilateral side of the painful stimulus, there is flexion (withdrawal); on the contralateral side, there is extension to maintain balance</p> <p>Reference: (Ref: BRS Physiology 6th [III C 3])</p>
<p>47. A 28-year-old man was seen by a neurologist because he had experienced prolonged episodes of tingling and numbness in his right arm. He underwent a neurologic exam to evaluate his sensory nervous system. Which of the following receptors is correctly paired with the type of stimulus to which it is most apt to respond?</p> <p>A) Pacinian corpuscle and motion B) Meissner corpuscle and deep pressure C) Merkel cells and warmth D) Ruffini corpuscles and sustained pressure E) Muscle spindle and tension</p> <p>Answer: D</p> <p>Discussion:</p> <p>Reference: (Ref: Gangon 25th/P-175)</p>	<p>48. A ventrolateral cordotomy is performed that produces relief of pain in the right leg. It is effective because it interrupts the</p> <p>A) Left dorsal column B) Left ventrolateral spinothalamic tract C) Right ventrolateral spinothalamic tract D) Right medial lemniscal pathway E) A direct projection to the primary somatosensory cortex</p> <p>Answer: B</p> <p>Discussion:</p> <p>Reference: (Ref: Gangon 25th/P-175)</p>
<p>49. Which of the following is a characteristic of nuclear bag fibers?</p> <p>A) They are one type of extrafusal muscle fiber B) They detect dynamic changes in muscle length C) They give rise to group Ib afferents D) They are innervated by α-motoneurons E) Detect static changes in muscle length</p> <p>Answer: B</p> <p>Discussion: Nuclear bag fibers are one type of intrafusal muscle fiber that make up muscle spindles. They detect dynamic changes in muscle length, give rise to group Ia afferent fibers, and are innervated by α-motoneurons. The other type of intrafusal fiber, the nuclear chain fiber, detects static changes in muscle length</p> <p>Reference: (Ref: BRS Physiology 6th [III B 3 a (1)])</p>	<p>50. Which of the following is a feature of the sympathetic, but not the parasympathetic, nervous system?</p> <p>A) Ganglia located in the effector organs B) Long preganglionic neurons C) Preganglionic neurons release norepinephrine D) Preganglionic neurons release acetylcholine (ACh) E) Preganglionic neurons originate in the thoracolumbar spinal cord</p> <p>Answer: E</p> <p>Discussion:</p> <p>Reference: (Ref: BRS Physiology 6th/[I A, B; Table 2-1; Figure 2-1])</p>