**Exam Five**

Please read all questions carefully. There is one best answer for each question.

1. Which the following is true of the **lateral spinothalamic** tracts?
2. It is an ascending tract
3. It is a descending tract
4. It conveys motor impulses
5. It conveys pain and touch
6. It conveys stretch sensations from the viscera
	1. 2, 3, and 5
	2. 2 and 4
	3. 1, 3, and 5
	4. 3 and 5
	5. 1 and 4
7. Identify “x”
	1. Dorsal root
	2. Motor pathway
	3. Ventral root
	4. Spinal nerve
	5. Dorsal root ganglion
8. Identify “Y”
	1. Anterior horn
	2. Lateral horn
	3. Posterior column
	4. Anterior column
	5. Posterior horn
9. Identify “Z”
	1. Posterior column
	2. Anterior horn
	3. Lateral horn
	4. Anterior column
	5. Posterior horn
10. The term “funiculi” (**column**) refers to
	1. The white matter of the cerebral cortex
	2. The gray matter of the cerebral cortex
	3. The white matter of the spinal cord
	4. The posterior gray matter in the spinal cord
	5. The anterior gray matter in the spinal cord
11. What happens if there is damage to the **lower motor neurons**
	1. Muscles display an irregular stimulation pattern
	2. Involuntary control of the muscle remains intact
	3. Sensory information fails to reach the brain
	4. Spastic paralysis results
	5. Flaccid paralysis results
12. Where would you expect to see the **soma** of a **second order neuron**?
	1. Thalamus
	2. Posterior horn of spinal cord
	3. Cerebral cortex
	4. Anterior horn of the spinal cord
	5. Dorsal root ganglion
13. What are the receptor types that are pain receptors?
	1. Exteroceptors
	2. Rhabdoceptors
	3. Nociceptors
	4. Thermoceptors
	5. Myoceptors
14. Which of the following cranial nerves is **sensory only**?
	1. Trigeminal
	2. Optic
	3. Hypoglossal
	4. Oculomotor
	5. Trochear
15. Which of the following cranial nerves is **mixed** (ignore proprioception for this question. Look for the mixed nerve that has sensory input from the skin.)
	1. Facial
	2. Vestibulocochlear
	3. Olfactory
	4. Optic
	5. Oculomotor
16. Which is true about the **spinocerebellar** **tract**?
	1. It is a descending tract
	2. It carries fibers for pain to the thalamus
	3. It carries fibers for the autonomic system only
	4. It decussates at the thalamus
	5. It does not contribute to the perception of sensation
17. The motor portion of this cranial nerve innervates the tongue and Parotid salivary gland, while the sensory portion is responsible for taste from the tongue and throat.
	1. Glossopharyngeal
	2. Vagus
	3. Vestibulocochlear
	4. Spinal accessory
	5. Facial
18. From the brachial plexus, which nerve innervates the **extensor muscles**?
	1. Axillary nerve
	2. Ulnar nerve
	3. Median nerve
	4. Radial nerve
	5. Musculocutaneous nerve
19. The **sciatic** nerve comes from the \_\_\_\_ plexus and is compose of these two nerves:
	1. Sacral: tibial and fibular
	2. Coccygeal: tibial and peroneal
	3. Cervical: tibial and peroneal
	4. Brachial: tibial and fibular nerves
	5. Lumbar: tibial and peroneal
20. A **Golgi Tendon Organ** will be activated by
	1. Temperature changes
	2. Muscle contraction
	3. Carbon dioxide concentrations
	4. Muscle stretch
	5. Tissue damage
21. Which of the following is true about the lateral horn of the spinal cord
	1. The lateral horn contains cell bodes of motor fibers running to smooth muscle and glands
	2. The lateral horn contains ascending nerve tracts
	3. The lateral horn contains descending nerve tracts
	4. The lateral horn contains cell bodies for sensory fibers
	5. The lateral horn contains cell bodies of motor fibers running to skeletal muscle
22. With muscle spindle activation, which of the following are true,
	* 1. The primary muscle has been contracted
		2. The primary muscle has been stretched
		3. The antagonistic muscle receives an impulse to contract
		4. The antagonistic muscle receives an impulse to relax
	1. 1 and 3
	2. 1 and 4
	3. 2 and 4
	4. 1, 3, and 4
	5. 2 and 3
23. A spinal nerve usually contains
	1. Ascending fibers only
	2. Mixed sensory and motor nerve fibers
	3. Non-myelinated fibers
	4. Efferent fibers only
	5. Autonomic fibers only
24. Where is the **cauda equina** located?
	1. At the level of the third lumbar vertebrae
	2. Anchored to the sacrum
	3. In the precentral gyrus
	4. In the cervical segments of the spinal cord
	5. At the level of the third thoracic vertebrae
25. Which option below describes the function of the **cervical plexus**?
	1. The cells responsible for producing and filtering CSF
	2. The network of nerves that produce the radial, median, and ulnar nerves
	3. A network of nerves coming from C1 – C4 that produce the phrenic nerve
	4. An area of cell bodies located outside of the central nervous system
	5. The location for the autonomic nerve cell bodies
26. What do the **gray commisure** of the spinal cord and the **corpus callosum** have in common?
	1. Both structures link the left and right sides of their respective structures
	2. Both contain a predominantly unipolar type neuron within their structures
	3. Both are considered association areas.
	4. Both are ascending tracts
	5. Both carry pain and temperature
27. Which of the following is **NOT** an **extrapyramidal** tract
	1. Corticospinal
	2. Tectospinal
	3. Rubrospinal
	4. Reticulospinal
	5. Vestibulospinal
28. Which branch of the spinal nerve would you expect to see innervate the dura mater?
	1. Dorsal root
	2. Meningeal rami
	3. Ventral rami
	4. Ventral root
	5. Dorsal rami
29. Which of the following senses uses a **chemoreceptor**?
	1. Pain
	2. Hearing
	3. Vision
	4. Taste
	5. Light touch
30. Which of the following is a **simple** **unencapsulated** receptor?
	1. Golgi Tendon Organ
	2. Photoreceptor in the retina
	3. Merkel’s disc
	4. Meissner’s corpuscle
	5. Pacinian corpuscle
31. There are three levels of neural integration. Which levels corresponds to a second order sensory neuron?
	1. Primary level
	2. Receptor level
	3. Perceptual level
	4. Somatic level
	5. Circuit level
32. Of the following senses, which will **not** adapt?
	1. Taste
	2. Light touch
	3. Deep pressure
	4. Pain
	5. Smell
33. Where would you expect to see a third order neuron?
	1. Ascending from the thalamus to the cortex
	2. Descending through the paravertebral ganglion
	3. Running from the spinal cord to an effector
	4. Running from the receptor to the CNS
	5. Ascending through the spinal cord to the thalamus
34. The **endoneurium** is
	1. Connective tissue that surrounds a fascicle
	2. Connective tissue that surrounds a neuron
	3. Composed of myelin
	4. Found surrounding mixed nerves only
	5. Connective tissue that surrounds a nerve
35. If you had a fiber that was classified as **general somatic efferent**, what type of fiber is it?
	1. Sensory to an organ
	2. Motor to a gland
	3. Motor from one of the cranial nerves going to the muscles of the face.
	4. Sensory from a muscle
	5. Motor to skeletal muscle
36. This cranial nerve is associated with the cribiform plate.
	1. Olfactory
	2. Abducens
	3. Trigeminal
	4. Optic
	5. Oculomotor
37. The oculomotor nerve innervates four of the six extrinsic eye muscles. Which of the list below is **not** innervated by cranial nerve III?
	1. Superior oblique
	2. Medial rectus
	3. Inferior rectus
	4. Inferior oblique
	5. Superior rectus
38. Which cranial nerve is responsible for taste sensation on the anterior two thirds of the tongue
	1. Vagus
	2. Facial
	3. Trochlear
	4. Trigeminal
	5. Glossopharyngeal
39. Which type of reflex can be monosynaptic?
	1. Withdrawal reflex
	2. Visceral reflex
	3. Pain reflex
	4. Crossed extensor reflex
	5. Somatic stretch reflex
40. A somatic motor fiber releases the neurotransmitter \_\_\_\_\_\_, while a postganglionic sympathetic fiber releases \_\_\_\_\_\_. (From the options below, choose the answer that makes the statement correct.)
	1. Acetylcholine; acetylcholine
	2. Norepinephrine; epinephrine
	3. Acetylcholine; norepinephrine
	4. Norepinephrine; acetylcholine
	5. Acetylcholine; dopamine
41. Which of the following will have a **long** postganglionic fiber?
	1. Splanchnic
	2. Special visceral afferent
	3. Somatic motor
	4. Sympathetic motor
	5. Parasympathetic motor
42. The Parasympathetic system can be described in terms of the “three Ds”. In the list below, indicate the options that **do not belong** to the parasympathetic system.
	* 1. Digestion
		2. Diuresis
		3. Deglutition
		4. Defecation
		5. Diaphoresis
43. 1 and 3
44. 2 and 4
45. 2 and 3
46. 3 and 5
47. 2 and 5
48. The sympathetic system can be described in terms of the “four Es”. Identify the **incorrect** option below.
	1. Erection
	2. Embarrassment
	3. Emergency
	4. Excitation
	5. Exercise
49. The **preganglionic** fibers of the sympathetic system travel through the \_\_\_\_\_\_\_ to reach the paravertebral ganglion.
	1. White rami
	2. Ventral rami
	3. Gray rami
	4. Dorsal rami
	5. Sympathetic fibers do not have rami associated with the ganglion
50. What is unusual about the **splanchnic** nerves?
	1. They are parasympathetic fibers that release norepinephrine
	2. They are parasympathetic fibers that do not synapse in any ganglion
	3. They are sympathetic fibers that innervate skeletal muscle
	4. They are all cholinergic
	5. They are sympathetic fibers that do not synapse in the paravertebral ganglion
51. Referred pain from the heart is often times felt in the left arm. In what other unusual location can it be perceived?
	1. Right knee
	2. Umbilicus
	3. Right arm
	4. Cheek
	5. Left buttock
52. **Adrenergic** fibers release
	1. Nitric oxide
	2. Cortisol
	3. Acetylcholine
	4. Norepinephrine
	5. Dopamine
53. What binds to a **nicotinic** receptor?
	1. Nitric oxide
	2. Cortisol
	3. Acetylcholine
	4. Norepinephrine
	5. Dopamine
54. Which system is responsible for **vasomotor tone**?
	1. Sympathetic
	2. Efferent fibers from the cranial nerves only
	3. Afferent fibers from the spinal nerve only
	4. Parasympathetic
	5. Both sympathetic and parasympathetic
55. The \_\_\_\_\_ system causes vasodilation and erection during sexual stimulation; the \_\_\_\_ system causes ejaculation. (Choose the option from below that makes the statement correct)
	1. Sympathetic; sympathetic
	2. Parasympathetic; sympathetic
	3. Sympathetic; parasympathetic
	4. Parasympathetic; somatic
	5. Parasympathetic; parasympathetic
56. Which activities does the parasympathetic system not control?
	1. arrector pili muscles
	2. Kidneys
	3. adrenal medulla
	4. sweat glands
	5. It has no control over any of the above options
57. The **Vagus** nerve extends throughout the body. To which organ does it **not** go?
	1. Lung
	2. Heart
	3. Stomach
	4. Kidney
	5. It goes to all of the organs listed above
58. Which cranial nerves carry **parasympathetic** fibers?
	* 1. Optic
		2. Oculomotor
		3. Trigeminal
		4. Glossopharyngeal
		5. Vagus
59. 1, 2, 3
60. 1, 3, 5
61. 1, 4, 5
62. 2, 4, 5
63. 2, 3, 4
64. The **denticulate ligaments** that attach the vertebrae to the spinal cord are made up of
	1. Elastic connective tissue
	2. Pia mater
	3. Arachnoid mater
	4. Dura mater
	5. Dense connective tissue
65. With damage to an **upper motor neuron**,
	1. The lower motor neuron will never fire
	2. The effector will be unaffected
	3. The lower motor neuron can still receive and respond to spinal reflexes
	4. The cortex becomes unstable
	5. Sensory information will fail to reach the brain

Turn in Opscan

Turn in Exam packet

Grades should be posted later this evening, or tomorrow at the latest.