# *Gray's Anatomy for Students 4th edition Drake Test Bank*

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# Drake: Gray's Anatomy for Students, 3rd Edition

## Chapter 02: Back

## Test Bank

### TRUE/FALSE

1. The nervous system is composed of brain, spinal cord, and peripheral nerves.

ANS: T
DIF: memorization
TOP: Body Systems
CHAP: Back

2. Bones of the appendicular skeleton form the brain case and vertebral column.

ANS: F
DIF: synthesis
TOP: Divisions of Skeleton
CHAP: Back

3. The upper extremities and the lower extremities are subdivisions of the axial skeleton.

ANS: F
DIF: synthesis
TOP: Divisions of Skeleton
CHAP: Back

4. The five sacral vertebrae remain separate until about 40 years of age; at that point they fuse to form one wedge-shaped bone.

ANS: F
DIF: memorization
TOP: Vertebral Column
CHAP: Back

5. Palpable bony landmarks are bones that can be touched and identified through the skin.

ANS: T
DIF: memorization
TOP: Palpable Bone Landmarks
CHAP: Back

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6. Normal curvature of the spine is convex through the thoracic region and concave through the cervical and lumbar regions.

ANS: T
DIF: memorization
TOP: Mechanisms of Disease
CHAP: Back

7. The dens is found on the first cervical vertebra or atlas.

ANS: F
DIF: memorization
TOP: Vertebral Column
CHAP: Back

8. The dens is found on the second cervical vertebra, or axis.

ANS: T
DIF: memorization
TOP: Vertebral Column
CHAP: Back

9. An articulation is a point of contact between bones.

ANS: T
DIF: memorization
TOP: Articulations Introduction
CHAP: Back

10. All synovial joints have an enclosed cavity with a lubricating fluid.

ANS: T
DIF: synthesis
TOP: Structure of Synovial Joints
CHAP: Back

11. Menisci are found in all synovial joints.

ANS: F
DIF: application
TOP: Structure of Synovial Joints
CHAP: Back

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12. Menisci are pillowlike structures formed of synovial membranes filled with synovial fluid.

ANS: F
DIF: synthesis
TOP: Structure of Synovial Joints
CHAP: Back

13. Hinge joints permit adduction and abduction.

ANS: F
DIF: memorization
TOP: Types of Synovial Joints
CHAP: Back

14. A gliding joint is a form of uniaxial joint.

ANS: F
DIF: memorization
TOP: Types of Synovial Joints
CHAP: Back

15. As a group, gliding joints are the least movable of the synovial joints.

ANS: T
DIF: memorization
TOP: Types of Synovial Joints
CHAP: Back

16. A "slipped disk" is the result of deterioration of the nucleus pulposus.

ANS: T
DIF: application
TOP: Vertebral Joints
CHAP: Back

17. A joint must allow movement between two bones to be called a *joint*.

ANS: F
DIF: memorization
TOP: Introduction
CHAP: Back

18. All fibrous joints are completely fixed joints.

ANS: F

DIF: memorization
TOP: Fibrous Joints
CHAP: Back

19. Most symphyses are located in the midline of the body.

ANS: T
DIF: memorization
TOP: Cartilaginous Joints
CHAP: Back

20. The vertebral column contains both cartilaginous joints and synovial joints.

ANS: T
DIF: memorization
TOP: Cartilaginous Joints
CHAP: Back

21. There are more synovial joints in the body than any other type of joint.

ANS: T
DIF: memorization
TOP: Synovial Joints
CHAP: Back

22. The elbow and the dens of the axis are both part of a uniaxial joint.

ANS: T
DIF: application
TOP: Types of Synovial Joints
CHAP: Back

23. Damage to the joint between the articulating surfaces of the vertebra can cause what is commonly called a slipped disk.

ANS: F
DIF: memorization
TOP: Representative Synovial Joints
CHAP: Back

24. If you are standing up and looking straight up toward the sky, your cervical spine will be hyperextended.

ANS: T
DIF: application

TOP: Angular Movements
CHAP: Back

25. *Myotome* is a term referring to a skeletal muscle group innervated by motor neuron axons from a given spinal nerve.

ANS: T
DIF: memorization
TOP: Dermatomes and Myotomes
CHAP: Back

26. The sacral plexus is found deep within the shoulder.

ANS: F
DIF: memorization
TOP: Sacral Plexus and Coccygeal Plexus
CHAP: Back

27. Skeletal muscles are somatic effectors.

ANS: T
DIF: memorization
TOP: Somatic Motor Nervous System
CHAP: Back

28. Autonomic effectors require two efferent neurons.

ANS: T
DIF: memorization
TOP: Structure of the Autonomic Nervous System
CHAP: Back

29. Each spinal nerve attaches to the spinal cord via two short roots.

ANS: T
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

30. The parasympathetic division is the dominant controller of the body at rest.

ANS: T
DIF: memorization
TOP: Functions of the Parasympathetic Division
CHAP: Back

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31. Sympathetic preganglionic neurons begin within the brain.

ANS: F
DIF: memorization
TOP: Sympathetic Preganglionic Neurons
CHAP: Back

32. The peripheral nervous system includes cranial nerves.

ANS: T
DIF: memorization
TOP: Introduction
CHAP: Back

33. The peripheral nervous system consists of 43 pairs of nerves and their branches.

ANS: T
DIF: application
TOP: Introduction
CHAP: Back

34. The peripheral nervous system contains only efferent nerves.

ANS: F
DIF: memorization
TOP: Introduction
CHAP: Back

35. Even though there are only seven cervical vertebra, this region generates eight cranial nerves.

ANS: T
DIF: memorization
TOP: Spinal Nerves
CHAP: Back

36. The nerves emerging from the lower lumbar and sacral regions branch from a structure called the *cauda equina*, not the spinal cord itself.

ANS: T
DIF: memorization
TOP: Spinal Nerves
CHAP: Back

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37. The spinal ganglion is located on the anterior nerve root.

ANS: F
DIF: memorization
TOP: Structure of the Spinal Nerves
CHAP: Back

38. Branches of the posterior ramus innervate the skin and muscles of the posterior surface of the head, neck, and trunk.

ANS: T
DIF: memorization
TOP: Structure of the Spinal Nerves
CHAP: Back

39. Nerve plexuses of the thoracic region innervate the abdominal organs.

ANS: F
DIF: memorization
TOP: Nerve Plexuses
CHAP: Back

40. The brachial plexus is the only plexus that contains a thoracic spinal nerve.

ANS: T
DIF: Nerve Plexuses/ Brachial Plexus
TOP: True
CHAP: Back

41. There is almost no overlap in the dermatomes of the body.

ANS: F
DIF: memorization
TOP: Dermatomes and Myotomes
CHAP: Back

42. Reflexes are always unconscious or involuntary.

ANS: F
DIF: memorization
TOP: Nature of a Reflex
CHAP: Back

43. A reflex always includes a muscle contraction or a gland secretion.

ANS: T

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DIF: memorization
TOP: Nature of a Reflex
CHAP: Back

44. In most cases, the effects of the sympathetic and parasympathetic divisions of the autonomic nervous system are antagonistic to each other.

ANS: T
DIF: memorization
TOP: Autonomic Nervous System
CHAP: Back

45. The somatic and visceral nervous systems are similar in that they both have two efferent neurons between the central nervous system and the effector organ.

ANS: F
DIF: memorization
TOP: Structure of the Autonomic Nervous System
CHAP: Back

46. The gray ramus consists of postganglionic fibers of the sympathetic nervous system.

ANS: T
DIF: application
TOP: Function of the Autonomic Nervous System
CHAP: Back

47. Sensory receptors make it possible for the body to respond to stimuli caused by changes occurring in our external or internal environment.

ANS: T
DIF: memorization
TOP: Sensory Receptors
CHAP: Back

48. Somatic sense receptors are distributed evenly throughout the body.

ANS: F
DIF: memorization
TOP: Distribution of Receptors
CHAP: Back

49. Proprioceptors are receptors for touch, pain, heat, and cold.

ANS: F
DIF: memorization

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TOP: Classification by Location
CHAP: Back

50. You feel hungry because of a proprioceptor.

ANS: F
DIF: memorization
TOP: Classification by Location
CHAP: Back

51. Proprioceptors are activated by a change in temperature.

ANS: F
DIF: memorization
TOP: Classification by Location
CHAP: Back

52. Somatic sense receptors located in muscles and joints are called *proprioceptors*.

ANS: T
DIF: synthesis
TOP: Classification by Location
CHAP: Back

53. Referred pain may be caused by deep organ receptor and skin area receptors entering the same segment of the spinal cord.

ANS: T
DIF: memorization
TOP: Referred Pain
CHAP: Back

54. When "central" and "peripheral" are used as directional terms in the nervous system, a nerve fiber may be called *peripheral* if it extends from the cell body away from the central nervous system.

ANS: T
DIF: memorization
TOP: Central and Peripheral Nervous Systems
CHAP: Back

55. The central nervous system is composed of efferent nerves only.

ANS: F
DIF: memorization

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TOP: Afferent and Efferent Divisions
CHAP: Back

56. The peripheral nervous system includes both efferent and afferent nerves.

ANS: T
DIF: memorization
TOP: Afferent and Efferent Divisions
CHAP: Back

57. Pathways from the autonomic nervous system which arise from the thoracic region of the spinal cord would be sympathetic pathways.

ANS: T
DIF: application
TOP: Somatic and Autonomic Nervous System
CHAP: Back

58. Pathways from the autonomic nervous system which leave the central nervous system from the brain would be sympathetic pathways.

ANS: F
DIF: application
TOP: Somatic and Autonomic Nervous System
CHAP: Back

59. The central nervous system includes the brain, spinal cord, and autonomic nerves.

ANS: F
DIF: memorization
TOP: Central Nervous System Introduction
CHAP: Back

60. The central nervous system includes all of the nervous system except the peripheral nervous system.

ANS: T
DIF: memorization
TOP: Central Nervous System Introduction
CHAP: Back

61. The meninges are protective coverings, continuous around the brain and spinal cord.

ANS: T
DIF: application

TOP: Coverings of the Brain and Spinal Cord
CHAP: Back

62. Cerebrospinal fluid circulates in the subarachnoid space of the meninges.

ANS: T
DIF: memorization
TOP: Formation and Circulation of Cerebrospinal Fluid
CHAP: Back

63. The spinal cord completely fills the vertebral canal in the vertebral column.

ANS: F
DIF: memorization
TOP: Structure of the Spinal Cord
CHAP: Back

64. A physician can use lumbar puncture to withdraw cerebrospinal fluid from the subarachnoid space in the lumbar region of the spinal cord.

ANS: T
DIF: memorization
TOP: Lumbar Puncture
CHAP: Back

65. Somatic sensory neuron cell bodies are located in the dorsal root ganglia of the spinal nerves.

ANS: T
DIF: application
TOP: Structure of the Spinal Cord
CHAP: Back

66. Cerebrospinal fluid is not found in the subarachnoid space.

ANS: T
DIF: memorization
TOP: Fluid Spaces
CHAP: Back

67. The most superficial border of the subarachnoid space is the dura mater.

ANS: F
DIF: application
TOP: Coverings of the Brain and Spinal Cord
CHAP: Back

68. The filum terminale is the name given to the dura mater below the spinal cord.

ANS: F
DIF: memorization
TOP: Coverings of the Brain and Spinal Cord
CHAP: Back

69. The spinal cord extends from the foramen magnum to the fifth lumbar vertebra.

ANS: F
DIF: memorization
TOP: Structure of the Spinal Cord
CHAP: Back

70. The dorsal root ganglion consists of cell bodies of unipolar sensory neurons.

ANS: T
DIF: memorization
TOP: Structure of the Spinal Cord
CHAP: Back

71. All spinal nerves are mixed nerves.

ANS: T
DIF: application
TOP: Structure of the Spinal Cord
CHAP: Back

72. There are 31 pairs of spinal nerves, all of which consist of both motor and sensory fibers.

ANS: T
DIF: memorization
TOP: Spinal Nerves
CHAP: Back

73. The anterior rami of all spinal nerves subdivide to form complex networks called *plexuses*.

ANS: F
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

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74. Each spinal nerve attaches to the spinal cord by means of two short roots, an anterior root and a posterior root.

ANS: T
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

75. The phrenic nerve is a branch of the brachial plexus.

ANS: F
DIF: application
TOP: Cervical Plexus
CHAP: Back

76. A dermatome is the skin surface area supplied by a single spinal nerve.

ANS: T
DIF: memorization
TOP: Dermatomes and Myotomes
CHAP: Back

77. Somatic reflexes are contractions of smooth muscles.

ANS: F
DIF: memorization
TOP: Nature of a Reflex
CHAP: Back

78. Visceral effectors are innervated by sympathetic fibers.

ANS: T
DIF: application
TOP: Autonomic Nervous System
CHAP: Back

79. Effectors that have single innervation by the autonomic nervous system are innervated only by the parasympathetic division.

ANS: F
DIF: memorization
TOP: Autonomic Nervous System
CHAP: Back

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80. Most effectors of the autonomic system are dually innervated by sympathetic and parasympathetic neurons.

ANS: T
DIF: memorization
TOP: Autonomic Nervous System
CHAP: Back

81. Sensory neurons can operate in autonomic reflex arcs.

ANS: T
DIF: application
TOP: Structure of the Autonomic Nervous System
CHAP: Back

82. Preganglionic neurons conduct impulses from the brain or spinal cord to an autonomic ganglion.

ANS: T
DIF: memorization
TOP: Structure of the Autonomic Nervous System
CHAP: Back

83. Conduction to autonomic effectors requires only one efferent neuron.

ANS: F
DIF: memorization
TOP: Structure of the Autonomic Nervous System
CHAP: Back

84. Sympathetic responses are usually widespread, involving many organ systems at once.

ANS: T
DIF: memorization
TOP: Sympathetic Postganglionic Neurons
CHAP: Back

85. The parasympathetic division is also called the *thoracolumbar division*.

ANS: F
DIF: memorization
TOP: Structure of the Sympathetic Pathways
CHAP: Back

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86. Parasympathetic stimulation has no effect on sweat glands.

ANS: T
DIF: memorization
TOP: Autonomic Functions
CHAP: Back

87. The sympathetic division is the dominant controller of the body at rest.

ANS: F
DIF: synthesis
TOP: Functions of the Autonomic Nervous System
CHAP: Back

88. Each spinal nerve branches into three rami: an anterior ramus, a posterior ramus, and an autonomic or visceral branch.

ANS: F
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

89. All cell bodies of the autonomic nervous system are located within the CNS.

ANS: F
DIF: application
TOP: Divisions of the Peripheral Nervous System
CHAP: Back

90. Once inside the sympathetic chain ganglion, the preganglionic fiber will always synapse with a sympathetic postganglionic neuron.

ANS: F
DIF: application
TOP: Structure of the Autonomic Nervous System
CHAP: Back

91. The "fight-or-flight" reaction is a normal response in times of stress.

ANS: T
DIF: memorization
TOP: Functions of the Autonomic Nervous System
CHAP: Back

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92. Under normal, nonstressful conditions, the parasympathetic division is dominant.

ANS: T
DIF: memorization
TOP: Functions of the Parasympathetic Division
CHAP: Back

93. The spinal root that possesses a swelling is the posterior root.

ANS: T
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

94. The dorsal root ganglion contains motor neuron cell bodies.

ANS: F
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

95. The lower end of the spinal cord bears the name lumbosacral plexus.

ANS: F
DIF: memorization
TOP: Sacral Plexus and Coccygeal Plexus
CHAP: Back

96. There are 28 pairs of spinal nerves.

ANS: F
DIF: memorization
TOP: Spinal Nerves
CHAP: Back

97. Herpes zoster is a unique viral infection that almost always affects the skin of a single dermatome.

ANS: T
DIF: memorization
TOP: Herpes Zoster
CHAP: Back

98. Small, distinct regions of gray matter within the CNS are called *nuclei*.

ANS: T

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DIF: memorization
TOP: Nerves and Tracts
CHAP: Back

99. Most nerves in the human nervous system are mixed (contain sensory and motor fibers).

ANS: T
DIF: memorization
TOP: Nerves and Tracts
CHAP: Back

100. Spinal nerves are considered part of the peripheral nervous system.

ANS: T
DIF: memorization
TOP: Central and Peripheral Nervous Systems
CHAP: Back

101. When "central" and "peripheral" are used as directional terms in the nervous system, a nerve fiber may be called *peripheral* if it extends from the cell body toward the central nervous system.

ANS: F
DIF: memorization
TOP: Central and Peripheral Nervous Systems
CHAP: Back

**MULTIPLE CHOICE**

1. Which is not a part of the axial skeleton?
a. rib
b. vertebral column
c. mandible
d. clavicle

ANS: D
DIF: memorization
TOP: Divisions of Skeleton
CHAP: Back

2. The term *sinus*, as it relates to bone markings, may be defined as a:
a. raised area or projection.
b. cavity within a bone.
c. tubelike opening or channel.
d. groove or elongated depression.

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ANS: B
DIF: memorization
TOP: Divisions of Skeleton
CHAP: Back

3. Which bone is a part of the axial skeleton?
a. rib
b. clavicle
c. radius
d. pelvic bones

ANS: A
DIF: memorization
TOP: Divisions of Skeleton
CHAP: Back

4. Which bone is a part of the appendicular skeleton?
a. scapula
b. vertebra
c. parietal
d. mandible

ANS: A
DIF: memorization
TOP: Divisions of Skeleton
CHAP: Back

5. The skeletal framework of the neck consists of:
a. lumbar vertebrae.
b. thoracic vertebrae.
c. sacral vertebrae.
d. cervical vertebrae.

ANS: D
DIF: memorization
TOP: Vertebral Column
CHAP: Back

6. The number of thoracic vertebrae is:
a. 5.
b. 7.
c. 10.
d. 12.

ANS: D
DIF: memorization

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TOP: Vertebral Column
CHAP: Back

7. All vertebrae, except the sacrum and coccyx, have a central opening called the:
a. spinous process.
b. vertebral foramen.
c. dens.
d. transverse process.

ANS: B
DIF: memorization
TOP: Vertebral Column
CHAP: Back

8. A hunchback appearance of the thoracic region is probably due to:
a. lordosis.
b. scoliosis.
c. kyphosis.
d. slipped disks.

ANS: C
DIF: memorization
TOP: Mechanisms of Disease
CHAP: Back

9. Lateral curvature of the spine is called:
a. scoliosis.
b. lordosis.
c. kyphosis.
d. convexity.

ANS: A
DIF: memorization
TOP: Mechanisms of Disease
CHAP: Back

10. Going from superior to inferior, the sequence of the vertebral column is:
a. sacral, coccyx, thoracic, lumbar, and cervical.
b. coccyx, sacral, lumbar, thoracic, and cervical.
c. cervical, lumbar, thoracic, sacral, and coccyx.
d. cervical, thoracic, lumbar, sacral, and coccyx.

ANS: D
DIF: application
TOP: Vertebral Column
CHAP: Back

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11. The structure that furnishes the axis for the rotation of the head from side to side is the:
a. dens.
b. spinous process.
c. vertebral foramen.
d. transverse process.

ANS: A
DIF: memorization
TOP: Vertebral Column
CHAP: Back

12. Which of the following is not an example of a fibrous joint?
a. symphyses
b. sutures
c. syndesmoses
d. gomphoses

ANS: A
DIF: application
TOP: Fibrous Joints (Synarthrosis)
CHAP: Back

13. What are the most movable joints in the body?
a. symphyses
b. synovial joints
c. syndesmoses
d. synchondroses

ANS: B
DIF: memorization
TOP: Synovial Joints
CHAP: Back

14. Which joint allows for the widest range of movement?
a. gliding
b. saddle
c. ball and socket
d. hinge

ANS: C
DIF: memorization
TOP: Types of Synovial Joints
CHAP: Back

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15. An example of a hinge joint is the:
a. head of the radius articulating with the ulna.
b. interphalangeal joints.
c. first metacarpal articulating with the trapezium.
d. head of the humerus articulating with the scapula.

ANS: B
DIF: application
TOP: Types of Synovial Joints
CHAP: Back

16. Which joint allows for the following movements: flexion, extension, abduction, adduction, rotation, and circumduction?
a. gliding
b. saddle
c. ball and socket
d. trochoid

ANS: C
DIF: synthesis
TOP: Types of Synovial Joints
CHAP: Back

17. Moving a part of the body forward is:
a. protraction.
b. elevation.
c. inversion.
d. depression.

ANS: A
DIF: application
TOP: Special Movements
CHAP: Back

18. The type of movement that increases the angle between body parts is:
a. flexion.
b. extension.
c. adduction.
d. abduction.

ANS: B
DIF: application
TOP: Angular Movements
CHAP: Back

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19. Vertebral bodies are connected together by the:
a. ligamenta flava.
b. ligamentum nuchae.
c. posterior longitudinal ligament.
d. intertransverse ligaments.

ANS: C
DIF: application
TOP: Vertebral Joints
CHAP: Back

20. Deterioration of the nucleus pulposus can result in:
a. "housemaid's knee."
b. total hip replacement.
c. osteoporosis.
d. a "slipped disk" or herniated disk.

ANS: D
DIF: application
TOP: Vertebral Joints
CHAP: Back

21. The ligamenta flava is located in the:
a. shoulder.
b. hip.
c. knee.
d. none of the above.

ANS: D
DIF: memorization
TOP: Representative Synovial Joints
CHAP: Back

22. The opposite of dorsiflexion is:
a. dorsiextension.
b. abduction.
c. plantar flexion.
d. none of the above.

ANS: C
DIF: memorization
TOP: Angular Movements
CHAP: Back

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23. Pain that is perceived as being superficial, but actually is caused by an underlying organ, is called:
a. phantom pain.
b. referred pain.
c. chronic pain.
d. acute pain.

ANS: B
DIF: memorization
TOP: Referred Pain
CHAP: Back

24. Viscероceptors are located in which of the following?
a. skin
b. tendons
c. internal organs
d. skeletal muscles

ANS: C
DIF: memorization
TOP: Classification by Location
CHAP: Back

25. The somatic senses enable us to detect sensations such as:
a. touch.
b. temperature.
c. pain.
d. all of the above.

ANS: D
DIF: memorization
TOP: Sense Organs Introduction
CHAP: Back

26. The layer of the meninges that serves as the inner periosteum of the cranial bone is the:
a. pia mater.
b. arachnoid membrane.
c. dura mater.

ANS: C
DIF: memorization
TOP: Coverings of the Brain and Spinal Cord
CHAP: Back

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27. The innermost layer of the meninges is the:
a. pia mater.
b. arachnoid membrane.
c. dura mater.

ANS: A
DIF: memorization
TOP: Coverings of the Brain and Spinal Cord
CHAP: Back

28. The main divisions of the central nervous system are the:
a. brain, spinal cord, and autonomic nerves.
b. brain, spinal cord, and peripheral nerves.
c. brain and spinal cord.

ANS: C
DIF: memorization
TOP: Central Nervous System Introduction
CHAP: Back

29. *Meningitis* refers to inflammation of the:
a. brain.
b. meninges.
c. spinal cord.

ANS: B
DIF: memorization
TOP: Meningitis
CHAP: Back

30. Cerebrospinal fluid is found in all except the:
a. subarachnoid space.
b. central canal.
c. third ventricle.
d. subdural space.

ANS: D
DIF: application
TOP: Fluid Spaces
CHAP: Back

31. If the anterior root of a spinal nerve were destroyed, a person would lose:
a. sensory perception related to that pathway.
b. motor output related to that pathway.
c. reflex activity only, related to that pathway.
d. both reflex activity and sensation related to that pathway.

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ANS: B
DIF: application
TOP: Structure of the Spinal Cord
CHAP: Back

32. If the dorsal root ganglia of the spinal nerve were destroyed, a person would lose:
a. sensory input to the CNS related to that pathway.
b. willed movement related to the pathway.
c. reflex activity only, related to that pathway.
d. both reflex activity and sensation related to that pathway.

ANS: A
DIF: application
TOP: Structure of the Spinal Cord
CHAP: Back

33. Which of the following is not true?
a. The spinal cord does not completely fill the vertebral canal.
b. The spinal cord extends from the foramen magnum to the first lumbar vertebra.
c. One bundle of nerve fibers (nerve roots) projects from each side of the spinal cord.
d. The spinal cord has anterior and posterior grooves that almost divide the cord into symmetrical halves.

ANS: C
DIF: memorization
TOP: Structure of the Spinal Cord
CHAP: Back

34. The cerebrospinal fluid resides in the:
a. ventricles of the brain.
b. subarachnoid space.
c. central canal of the spinal cord.
d. all of the above.

ANS: D
DIF: memorization
TOP: Fluid Spaces
CHAP: Back

35. A way to distinguish between the anterior and posterior part of the spinal cord is:
a. the dura mater is thickest on the posterior side.
b. the posterior fissure is deeper and wider than the anterior fissure.
c. the anterior fissure is deeper and wider than the posterior fissure.
d. A and B.

ANS: C

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DIF: memorization
TOP: Structure of the Spinal Cord
CHAP: Back

36. Which of the following is not a somatic sense?
a. touch
b. pressure
c. proprioception
d. all of the above are somatic senses

ANS: D
DIF: memorization
TOP: Sensory Functions of the Cortex
CHAP: Back

37. Which of the following is not a plexus of the spinal nerves?
a. cervical
b. brachial
c. lumbar
d. thoracic

ANS: D
DIF: memorization
TOP: Nerve Plexuses
CHAP: Back

38. The cervical plexus:
a. is found deep in the neck.
b. is formed by the ventral rami of the first four cervical nerves and part of C5.
c. includes the phrenic nerve.
d. all of the above.

ANS: D
DIF: memorization
TOP: Cervical Plexus
CHAP: Back

39. The spinal nerves are connected to the spinal cord and consist of:
a. 12 pairs.
b. 21 pairs.
c. 31 pairs.
d. 41 pairs.

ANS: C
DIF: memorization

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TOP: Spinal Nerves
CHAP: Back

40. Which of the following is true about spinal nerves? They are:
a. only sensory fibers.
b. only motor fibers.
c. completely autonomic fibers.
d. motor and sensory fibers.

ANS: D
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

41. A mixed nerve is one that:
a. goes to both the skin surface and to the viscera.
b. has its pathway mixed with other nerves.
c. carries both sensory and motor fibers.
d. carries large and small motor fibers.

ANS: C
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

42. Somatic reflexes consist of:
a. contractions of smooth muscle.
b. contractions of cardiac muscle.
c. glandular contractions.
d. contractions of skeletal muscles.

ANS: D
DIF: memorization
TOP: Nature of a Reflex
CHAP: Back

43. Which of the following would not be an effector of the autonomic nervous system?
a. skeletal muscles
b. blood vessels
c. sweat glands
d. the iris of the eye

ANS: A
DIF: memorization
TOP: Autonomic Nervous System
CHAP: Back

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44. Once inside the sympathetic chain ganglion, the preganglionic fiber may:
a. synapse with a sympathetic postganglionic neuron.
b. send ascending and/or descending branches through the sympathetic trunk to synapse with postganglionic neurons in other chain ganglia.
c. pass through one or more ganglia without synapsing.
d. all of the above.

ANS: D
DIF: memorization
TOP: Structure of the Autonomic Nervous System
CHAP: Back

45. All of the following are examples of parasympathetic stimulation except:
a. contraction of the urinary bladder.
b. relaxation of the sphincters of the digestive tract.
c. increased salivation.
d. increased heart rate.

ANS: D
DIF: application
TOP: Functions of the Autonomic Nervous System
CHAP: Back

46. Parasympathetic stimulation has no effect on any of the following areas except:
a. sweat glands.
b. skin blood vessels.
c. liver.
d. urinary bladder.

ANS: D
DIF: application
TOP: Functions of the Parasympathetic Division
CHAP: Back

47. All of the following are examples of sympathetic stimulation except:
a. decreased secretion in the pancreas.
b. constriction of the urinary sphincters.
c. constriction of the bronchioles.
d. dilation of skeletal muscle blood vessels.

ANS: C
DIF: memorization
TOP: Functions of the Sympathetic Division
CHAP: Back

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48. All of the following are examples of parasympathetic stimulation except:
a. contraction of the urinary bladder.
b. relaxation of the sphincters of the digestive tract.
c. increased secretion of saliva.
d. increased rate and strength of contraction of cardiac muscle.

ANS: D
DIF: application
TOP: Functions of the Parasympathetic Division
CHAP: Back

49. Which of the following is a correct statement?
a. There are 7 cervical nerve pairs.
b. There are 11 thoracic nerve pairs.
c. There are 5 lumbar nerve pairs.
d. All of the above are correct statements.

ANS: C
DIF: memorization
TOP: Spinal Nerves
CHAP: Back

50. The peripheral nervous system includes:
a. only spinal nerves.
b. only spinal nerves and their branches.
c. only cranial nerves, spinal nerves, and their branches.
d. cranial nerves, the spinal cord, spinal nerves, and their branches.

ANS: C
DIF: memorization
TOP: Introduction
CHAP: Back

51. The peripheral nervous system includes:
a. autonomic nerves.
b. sensory nerves.
c. somatic nerves.
d. all of the above.

ANS: D
DIF: memorization
TOP: Introduction
CHAP: Back

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52. Which part of the vertebral column has one more pair of nerves coming from it than it has vertebra?
a. cervical
b. thoracic
c. lumbar
d. B and C

ANS: A
DIF: memorization
TOP: Spinal Nerves
CHAP: Back

53. Which is not true of the anterior nerve root?
a. It is also called the *ventral root*.
b. It contains the spinal ganglion.
c. It includes motor neurons.
d. All of the above are true.

ANS: B
DIF: memorization
TOP: Structure of Spinal Nerves
CHAP: Back

54. Which is not true of the posterior root?
a. It is also called the *dorsal root*.
b. It includes the spinal ganglion.
c. It includes sensory fibers.
d. All of the above are true.

ANS: D
DIF: memorization
TOP: Structure of the Spinal Nerves
CHAP: Back

55. Which region of the spinal cord does not contribute nerves to a plexus?
a. cervical
b. thoracic
c. lumbar
d. all of the above regions contribute to a plexus

ANS: D
DIF: application
TOP: Nerve Plexuses/Brachial Plexus
CHAP: Back

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56. The part of the nervous system that transmits impulses from the CNS to the skeletal muscle is the:
a. somatic motor nervous system.
b. autonomic nervous system.
c. central nervous system.
d. afferent division.

ANS: A
DIF: memorization
TOP: Somatic and Autonomic Nervous Systems
CHAP: Back

57. Gray matter in the brain and spinal cord consists primarily of:
a. nerve fibers.
b. neuroglia.
c. axons.
d. cell bodies.

ANS: D
DIF: memorization
TOP: Nerves and Tracts
CHAP: Back

58. The white matter of the nervous system is made up of:
a. myelinated fibers.
b. nuclei.
c. unmyelinated fibers.
d. ganglia.

ANS: A
DIF: memorization
TOP: Nerves and Tracts
CHAP: Back

59. Nerves that contain mostly afferent fibers are called:
a. sensory nerves.
b. motor nerves.
c. mixed nerves.
d. Schwann nerves.

ANS: A
DIF: memorization
TOP: Functional Classification
CHAP: Back

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60. White matter in the CNS consists of:
a. myelinated nerve fibers.
b. neuroglia.
c. axons.
d. cell bodies.

ANS: A
DIF: memorization
TOP: Nerves and Tracts
CHAP: Back

**MATCHING**

*Match the following terms with their main action.*
a. abductors
b. adductors
c. extensors
d. flexors
e. pronators
f. supinators

1. _____ increase the angle of a joint.

ANS: C
DIF: application
TOP: Extension and Hyperextension
CHAP: Back

*Match the following terms with their main action.*
a. abductors
b. adductors
c. extensors
d. flexors
e. pronators
f. supinators

2. _____ decrease the angle of a joint.

ANS: D
DIF: application
TOP: Flexion
CHAP: Back

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*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

3. _____ A thin layer of cartilage covering the articulating surfaces of the bones.

ANS: A
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

*Match the following phrases with the division(s) of the autonomic nervous system most closely described.*
a. sympathetic
b. parasympathetic
c. both sympathetic and parasympathetic

4. _____ chain of postganglionic neurons

ANS: A
DIF: memorization
TOP: Structure of the Autonomic Nervous System
CHAP: Back

*Match the following phrases with the division(s) of the autonomic nervous system most closely described.*
a. sympathetic
b. parasympathetic
c. both sympathetic and parasympathetic

5. _____ ganglia lie near or in visceral effectors

ANS: B
DIF: memorization
TOP: Structure of the Autonomic Nervous System
CHAP: Back

*Match the following phrases with the division(s) of the autonomic nervous system most closely described.*
a. sympathetic
b. parasympathetic

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c. both sympathetic and parasympathetic

6. _____ activated under stress conditions

ANS: A
DIF: memorization
TOP: Functions of the Sympathetic Division
CHAP: Back

*Match the following phrases with the division(s) of the autonomic nervous system most closely described.*
a. sympathetic
b. parasympathetic
c. both sympathetic and parasympathetic

7. _____ responses are usually widespread, involving many organs

ANS: A
DIF: memorization
TOP: Parasympathetic Postganglionic Neurons
CHAP: Back

*Match the following phrases with the division(s) of the autonomic nervous system most closely described.*
a. sympathetic
b. parasympathetic
c. both sympathetic and parasympathetic

8. _____ slows the heart rate

ANS: B
DIF: memorization
TOP: Autonomic Functions
CHAP: Back

*Match the following phrases with the division(s) of the autonomic nervous system most closely described.*
a. sympathetic
b. parasympathetic
c. both sympathetic and parasympathetic

9. _____ associated with "fight-or-flight" response

ANS: A
DIF: memorization

TOP: Functions of the Sympathetic Division
CHAP: Back

*Match the following descriptions with the types of neurons.*
a. afferent
b. efferent
c. interneuron

10. _____ innervates glands

ANS: B
DIF: application
TOP: Functional Classification
CHAP: Back

*Match the following descriptions with the types of neurons.*
a. afferent
b. efferent
c. interneuron

11. _____ found completely in brain and spinal cord

ANS: C
DIF: memorization
TOP: Functional Classification
CHAP: Back

*Match the following descriptions with the types of neurons.*
a. afferent
b. efferent
c. interneuron

12. _____ innervates muscles

ANS: B
DIF: memorization
TOP: Functional Classification
CHAP: Back

*Match the following descriptions with the types of neurons.*
a. afferent
b. efferent
c. interneuron

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13. _____ carries impulses toward spinal cord and brain

ANS: A
DIF: memorization
TOP: Functional Classification
CHAP: Back

*Match the following descriptions with the types of neurons.*
a. afferent
b. efferent
c. interneuron

14. _____ connects sensory and motor neurons

ANS: C
DIF: memorization
TOP: Functional Classification
CHAP: Back

*Match the following descriptions with the types of neurons.*
a. afferent
b. efferent
c. interneuron

15. _____ carries sensory impulses only

ANS: A
DIF: memorization
TOP: Reflex Arc
CHAP: Back

*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

16. _____ Small space between two articulating bones.

ANS: C
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

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*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

17. _____ Secretes a lubricating fluid into the joint capsule.

ANS: B
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

18. _____ Pads of fibrocartilage between articulating bones.

ANS: D
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

19. _____ Strong cords of dense white connective tissue which help stabilize a joint.

ANS: F
DIF: memorization

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TOP: Structure of Synovial Joints
CHAP: Back

*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

20. _____These structures cushion and facilitate movement in a joint.

ANS: G
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

21. _____ These pads divide the joint cavity into two cavities.

ANS: D
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

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22. _____ A sleevelike extension of the periosteum of each of the articulating bones in a joint.

ANS: E
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

23. _____ A moist, slippery membrane that lines the inner bone surface of a joint capsule.

ANS: B
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

*Match the description of the structure of the synovial joint with the correct term.*
a. articular cartilage
b. synovial membrane
c. joint cavity
d. menisci
e. fibrous membrane
f. ligaments
g. bursae

24. _____ These grow between the bones of a joint, holding them together more firmly than a joint capsule alone.

ANS: F
DIF: memorization
TOP: Structure of Synovial Joints
CHAP: Back

*Match the following muscles with their action.*
a. abduction
b. adduction
c. flexion
d. extension

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25. _____ semispinalis capitis

ANS: D
DIF: application
TOP: Selected Muscles Grouped According to Function
CHAP: Back

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