

Name _____

Choices may be used more than once or not at all.

Matching

1-5. Place these structures in the order they are affected by sound waves entering the ear.

- | | | |
|----------------------|--------|----------|
| A) Hair cells | first | 1) _____ |
| B) Perilymph | second | 2) _____ |
| C) Oval window | third | 3) _____ |
| D) Auditory ossicles | fourth | 4) _____ |
| E) Tympanic membrane | fifth | 5) _____ |

6-10. Place these events in the order they occur in response to movement of the basilar membrane

- | | | |
|--|--------|-----------|
| A) Movement of the stereocilia open cation channels and depolarizes hair cells | first | 6) _____ |
| B) Synaptic vesicles fuse with the presynaptic membrane of the hair cell | second | 7) _____ |
| C) Glutamate is released from synaptic vesicles of the hair cells | third | 8) _____ |
| D) Stereocilia of the hair cells bend against tectorial membrane | fourth | 9) _____ |
| E) Voltage gated Ca^{2+} channels open in the hair cells | fifth | 10) _____ |

11-15. Place in order the central pathways for perception of sound.

- | | | |
|--|--------|-----------|
| A) Cochlear nerve | first | 11) _____ |
| B) Auditory Cortex | second | 12) _____ |
| C) Inferior Colliculus of Midbrain | third | 13) _____ |
| D) Ventral Cochlear Nucleus of Medulla | fourth | 14) _____ |
| E) Medial Geniculate Nucleus of Thalamus | fifth | 15) _____ |

16-20. Place these structures in the order light waves pass into the eye and through the retina.

- | | | |
|---------------------------|--------|-----------|
| A) Retinal ganglion cells | first | 16) _____ |
| B) Photoreceptor cells | second | 17) _____ |
| C) Crystalline lens | third | 18) _____ |
| D) Cornea | fourth | 19) _____ |
| E) Pupil | fifth | 20) _____ |

21-25. Matching (in the context of photoreceptors)

- | | | |
|---|---|-----------|
| A) Hyperpolarizes and secretes less glutamate | Rod exposed to red | 21) _____ |
| B) Depolarizes and secretes more glutamate | Rod exposed to blue/green | 22) _____ |
| | Red absorbing cone exposed to red | 23) _____ |
| | Blue absorbing cone exposed to yellow | 24) _____ |
| | Green absorbing cone exposed to magenta | 25) _____ |

26-30. Place these structures in the order that neural signals travel in the retina and then into the CNS

- | | | |
|--|--------|-----------|
| A) Optic nerve | first | 26) _____ |
| B) Bipolar cells | second | 27) _____ |
| C) Photoreceptor cells | third | 28) _____ |
| D) Retinal ganglion cells | fourth | 29) _____ |
| E) Lateral geniculate nuclei of thalamus | fifth | 30) _____ |

31-35. Matching (connected to)

- | | | |
|-----------------------------|---------------------------------|-----------|
| A) Left retina of left eye | Left optic tract | 31) _____ |
| B) Left retina of right eye | Left optic nerve | 32) _____ |
| C) Right retina of left eye | Left superior colliculus | 33) _____ |
| D) A and B | Left primary visual cortex | 34) _____ |
| E) A and C | Left lateral geniculate nucleus | 35) _____ |

36-40. Matching

- | | | |
|----------------|---|-----------|
| A) Astigmatism | requires complementary cylindrical eyeglasses for correction | 36) _____ |
| B) Emmetropia | Uses about +7 diopter eye lens for far vision (no eyeglasses required) | 37) _____ |
| C) Hyperopia | With +7 diopter eye lens, requires (-) diopter eyeglasses for far vision | 38) _____ |
| D) Myopia | Uses about +20 diopter eye lens for close vision (no eyeglasses required) | 39) _____ |
| | With +20 diopter eye lens, requires (+) diopter eyeglasses for close vision | 40) _____ |

41-45. Place the following events in the order they occur to cause contraction of a skeletal muscle cell. Start at C.

- | | | |
|---|--------|-----------|
| A) Muscle cell contracts | first | 41) _____ |
| B) Myosin heads bind to actin | second | 42) _____ |
| C) Ca ²⁺ diffuses into intracellular fluid | third | 43) _____ |
| D) Myosin head bends and pulls actin toward M-line | fourth | 44) _____ |
| E) Ca ²⁺ binds to troponin and moves tropomyosin away from actin | fifth | 45) _____ |

46-50. Place these events in the order they occur to cause contraction of a skeletal muscle cell

- | | | |
|--|--------|-----------|
| A) Ca ²⁺ ions diffuse into intracellular fluid | first | 46) _____ |
| B) Ca ²⁺ binds to <u>troponin</u> and uncovers actin | second | 47) _____ |
| C) Ca ²⁺ channels open in sarcoplasmic reticulum | third | 48) _____ |
| D) Acetylcholine binds to nicotinic-m receptors of <u>skeletal muscle cell</u> | fourth | 49) _____ |
| E) Action potential propagates along sarcolemma of <u>skeletal muscle cell</u> | fifth | 50) _____ |

51-55. Place these events in the order they occur to cause contraction of a cardiac muscle cell

- | | | |
|--|--------|-----------|
| A) Ca ²⁺ ions diffuse into intracellular fluid | first | 51) _____ |
| B) Ca ²⁺ binds to <u>troponin</u> and uncovers actin | second | 52) _____ |
| C) Ca ²⁺ channels open in transverse tubules / sarcoplasmic reticulum | third | 53) _____ |
| D) Action potential propagates along sarcolemma of <u>cardiac muscle cell</u> | fourth | 54) _____ |
| E) Na ⁺ and Ca ²⁺ ions diffuse through gap junctions into <u>cardiac muscle cell</u> | fifth | 55) _____ |

56-60. Place these events in the order they occur to cause contraction in a smooth muscle cell.

- | | | |
|---|--------|-----------|
| A) The myosin cross-bridges bind to actin | first | 56) _____ |
| B) ATP energizes and elongates myosin heads | second | 57) _____ |
| C) The myosin heads bend and pull actin toward M-lines | third | 58) _____ |
| D) MLC kinase phosphorylates (activates) the ATPase of myosin | fourth | 59) _____ |
| E) Myosin light chain (MLC) kinase is activated by calcium-calmodulin | fifth | 60) _____ |

61-65. Place these events in the order they occur during cross-bridge cycling in a skeletal muscle cell.

- | | | |
|---|--------|-----------|
| A) ATP binds to myosin and causes the myosin cross-bridge to release from actin | first | 61) _____ |
| B) The myosin cross-bridge recoils back to original shape (bends) and pulls actin | second | 62) _____ |
| C) ADP is released, but the myosin head remains bound to actin | third | 63) _____ |
| D) ATP binding energizes (elongates) the myosin cross-bridge | fourth | 64) _____ |
| E) The myosin cross-bridge binds with the actin | fifth | 65) _____ |

66-70. Matching

- | | | |
|----------------------|---|-----------|
| A) Large motor units | Generally control gross movement | 66) _____ |
| B) Small motor units | Generally control precise movement | 67) _____ |
| C) A and B | Include a gamma motor neuron and muscle spindle cells | 68) _____ |
| | Small alpha motor neurons connected to few skeletal muscle cells | 69) _____ |
| | Large alpha motor neurons connected to many skeletal muscle cells | 70) _____ |

71-75. Place these events in the order they occur in response to stimulation of an alpha motor neuron.

- | | | |
|---|--------|-----------|
| A) Synaptic vesicles fuse to presynaptic membrane of motor neuron | first | 71) _____ |
| B) Acetylcholine is released from synaptic bulb of motor neuron | second | 72) _____ |
| C) Action potential is generated at axon hillock and into axon | third | 73) _____ |
| D) Dendrites of motor neuron respond to glutamate | fourth | 74) _____ |
| E) Ca ²⁺ enter synaptic bulb of motor neuron | fifth | 75) _____ |

76-80. Place the following in the order that signals from muscle spindles travel to cause muscle contraction.

- | | | |
|--|--------|-----------|
| A) Skeletal muscle cells | first | 76) _____ |
| B) Posterior horn of spinal cord | second | 77) _____ |
| C) Muscle spindle sensory neurons | third | 78) _____ |
| D) Stretch receptors around muscle spindles | fourth | 79) _____ |
| E) Alpha motor neurons in anterior horn of spinal cord | fifth | 80) _____ |

81-85. Place the following in the order that signals from nociceptors travel to cause muscle contraction.

- | | | |
|---|--------|-----------|
| A) Limb flexor muscles | first | 81) _____ |
| B) Posterior horn of spinal cord | second | 82) _____ |
| C) Cutaneous nociceptor neurons | third | 83) _____ |
| D) Alpha motor neurons in anterior horn of spinal cord | fourth | 84) _____ |
| E) Excitatory and inhibitory interneuron in posterior horn of spinal cord | fifth | 85) _____ |

86-90. Matching

- | | | |
|---|------------------------|-----------|
| A) Control distal and precision muscles | Small motor units | 86) _____ |
| B) Control axial and postural muscles | Large motor units | 87) _____ |
| | Corticospinal tract | 88) _____ |
| | Medial motor pathways | 89) _____ |
| | Lateral motor pathways | 90) _____ |

91-95. Matching

- | | | |
|---------------------------|---|-----------|
| A) Lateral motor pathways | Include the corticospinal tract | 91) _____ |
| B) Medial motor pathways | Control axial and postural muscles | 92) _____ |
| | Control distal and fine (precision) muscles | 93) _____ |
| | Include the vestibulospinal tract for control of balance | 94) _____ |
| | Include the tectospinal tract for control of orientation of head and eyes | 95) _____ |

Fill in

1. Low frequency sound is detected by the portions of the basilar membrane of the cochlea that are more _____ (characteristic)
2. Movement of the basilar membrane and/or tectorial membrane causes the _____ of the hair cells to move.
3. An image is focused on the retina by both the _____ and the _____.
4. The loss of elasticity of the lens with increasing age is called _____.
5. Near sightedness is corrected with _____ lenses.
6. Light striking the retina is detected by _____ cells
7. Damage to the left optic tract would cause blindness in the _____ visual field.
8. Damage to the temporal lobe would interfere with perceiving the _____ of words.
9. An image is focused on the retina by refraction in the _____ and the _____.
10. Far vision becomes sharp when the ciliary muscle _____.

11. Near sightedness is corrected with _____ eyeglasses.
12. An abnormal growth of fibrous tissue of the eye lens, causing clouding, is called a _____.
13. _____ binds to nicotinic-m receptors in the motor endplate of skeletal muscle cells.
14. Release of Ca^{2+} from the sarcoplasmic reticulum in skeletal muscle cells depends on the generation of _____ in the sarcolemma and transverse tubules.
15. In _____ and _____ muscle, the ATPase of the heads of the myosin is always active and able to break apart ATP and energize the myosin.
16. In _____ muscle, the ATPase of the heads of the myosin is inactive and unable to break apart ATP until activation of the ATPase by myosin light chain (MLC) kinase.
17. In skeletal and cardiac muscle Ca^{2+} binds to _____ and uncovers actin.
18. In smooth muscle Ca^{2+} binds to _____ and activates MLC kinase, which in turn activates the _____ of the myosin heads.
19. Binding of _____ (a protein) to _____ (a protein) causes muscle contraction
20. The motor end plates of skeletal muscle cells are innervated by _____ motor neurons.
21. Skeletal muscle length is controlled largely by _____ reflexes.
22. Skeletal muscle length is measured by _____ sensory neurons.
23. _____ motor neurons stimulate the contraction of muscle spindles and thereby adjust the set point of muscle spindles
24. Withdrawal of a limb from noxious stimulation requires _____ of flexor motor neurons and _____ of extensor motor neurons.
25. The _____ tract is involved in controlling muscles for posture in response to signals from the semicircular canals.
26. The _____ tract is involved in controlling muscles for movement of the head and trunk in response to signals from the eyes.
27. The _____ tract is involved in controlling the excitability (sensitivity) of alpha motor neurons in the spinal cord and brain stem.
28. The _____ tract is involved in integrating the control of muscles located distally with the control of muscles located proximally.
29. The _____ tract is involved especially in the control of muscles located distally for precise movements.
30. The _____ nuclei are involved in initiating the control of muscles in voluntary movements.
31. Abnormally low secretion of _____ by the substantia nigra is associated the loss of intentional control of movement, seen clinically as Parkinson's Disease.

Name _____

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Matching

1-5. Place these structures in the order they are affected by sound waves entering the ear.

- | | | |
|----------------------|--------|-------------|
| A) Hair cells | first | 1) <u>E</u> |
| B) Perilymph | second | 2) <u>D</u> |
| C) Oval window | third | 3) <u>C</u> |
| D) Auditory ossicles | fourth | 4) <u>B</u> |
| E) Tympanic membrane | fifth | 5) <u>A</u> |

6-10. Place these events in the order they occur in response to movement of the basilar membrane

- | | | |
|--|--------|--------------|
| A) Movement of the stereocilia open cation channels and depolarizes hair cells | first | 6) <u>D</u> |
| B) Synaptic vesicles fuse with the presynaptic membrane of the hair cell | second | 7) <u>A</u> |
| C) Glutamate is released from synaptic vesicles of the hair cells | third | 8) <u>E</u> |
| D) Stereocilia of the hair cells bend against tectorial membrane | fourth | 9) <u>B</u> |
| E) Voltage gated Ca ²⁺ channels open in the hair cells | fifth | 10) <u>C</u> |

11-15. Place in order the central pathways for perception of sound.

- | | | |
|--|--------|--------------|
| A) Cochlear nerve | first | 11) <u>A</u> |
| B) Auditory Cortex | second | 12) <u>D</u> |
| C) Inferior Colliculus of Midbrain | third | 13) <u>C</u> |
| D) Ventral Cochlear Nucleus of Medulla | fourth | 14) <u>E</u> |
| E) Medial Geniculate Nucleus of Thalamus | fifth | 15) <u>B</u> |

16-20. Place these structures in the order light waves pass into the eye and through the retina.

- | | | |
|---------------------------|--------|--------------|
| A) Retinal ganglion cells | first | 16) <u>D</u> |
| B) Photoreceptor cells | second | 17) <u>E</u> |
| C) Crystalline lens | third | 18) <u>C</u> |
| D) Cornea | fourth | 19) <u>A</u> |
| E) Pupil | fifth | 20) <u>B</u> |

21-25. Matching (in the context of photoreceptors)

- | | | |
|---|---|--------------|
| A) Hyperpolarizes and secretes less glutamate | Rod exposed to red | 21) <u>B</u> |
| B) Depolarizes and secretes more glutamate | Rod exposed to blue/green | 22) <u>A</u> |
| | Red absorbing cone exposed to red | 23) <u>A</u> |
| | Blue absorbing cone exposed to yellow | 24) <u>B</u> |
| | Green absorbing cone exposed to magenta | 25) <u>B</u> |

26-30. Place these structures in the order that neural signals travel in the retina and then into the CNS

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|--|--------|--------------|
| A) Optic nerve | first | 26) <u>C</u> |
| B) Bipolar cells | second | 27) <u>B</u> |
| C) Photoreceptor cells | third | 28) <u>D</u> |
| D) Retinal ganglion cells | fourth | 29) <u>A</u> |
| E) Lateral geniculate nuclei of thalamus | fifth | 30) <u>E</u> |

31-35. Matching (connected to)

- | | | |
|-----------------------------|---------------------------------|--------------|
| A) Left retina of left eye | Left optic tract | 31) <u>D</u> |
| B) Left retina of right eye | Left optic nerve | 32) <u>E</u> |
| C) Right retina of left eye | Left superior colliculus | 33) <u>D</u> |
| D) A and B | Left primary visual cortex | 34) <u>D</u> |
| E) A and C | Left lateral geniculate nucleus | 35) <u>D</u> |

36-40. Matching

- | | | |
|----------------|---|------------------|
| A) Astigmatism | requires complementary cylindrical eyeglasses for correction | 36) <u> A </u> |
| B) Emmetropia | Uses about +7 diopter eye lens for far vision (no eyeglasses required) | 37) <u> B </u> |
| C) Hyperopia | With +7 diopter eye lens, requires (-) diopter eyeglasses for far vision | 38) <u> D </u> |
| D) Myopia | Uses about +20 diopter eye lens for close vision (no eyeglasses required) | 39) <u> B </u> |
| | With +20 diopter eye lens, requires (+) diopter eyeglasses for close vision | 40) <u> C </u> |

41-45. Place the following events in the order they occur to cause contraction of a skeletal muscle cell. Start at C.

- | | | |
|--|--------|------------------|
| A) Muscle cell contracts | first | 41) <u> C </u> |
| B) Myosin heads bind to actin | second | 42) <u> E </u> |
| C) Ca^{2+} diffuses into intracellular fluid | third | 43) <u> B </u> |
| D) Myosin head bends and pulls actin toward M-line | fourth | 44) <u> D </u> |
| E) Ca^{2+} binds to troponin and moves tropomyosin away from actin | fifth | 45) <u> A </u> |

46-50. Place these events in the order they occur to cause contraction of a skeletal muscle cell

- | | | |
|--|--------|------------------|
| A) Ca^{2+} ions diffuse into intracellular fluid | first | 46) <u> D </u> |
| B) Ca^{2+} binds to <u>troponin</u> and uncovers actin | second | 47) <u> E </u> |
| C) Ca^{2+} channels open in sarcoplasmic reticulum | third | 48) <u> C </u> |
| D) Acetylcholine binds to nicotinic-m receptors of <u>skeletal muscle cell</u> | fourth | 49) <u> A </u> |
| E) Action potential propagates along sarcolemma of <u>skeletal muscle cell</u> | fifth | 50) <u> B </u> |

51-55. Place these events in the order they occur to cause contraction of a cardiac muscle cell

- | | | |
|--|--------|------------------|
| A) Ca^{2+} ions diffuse into intracellular fluid | first | 51) <u> E </u> |
| B) Ca^{2+} binds to <u>troponin</u> and uncovers actin | second | 52) <u> D </u> |
| C) Ca^{2+} channels open in transverse tubules / sarcoplasmic reticulum | third | 53) <u> C </u> |
| D) Action potential propagates along sarcolemma of <u>cardiac muscle cell</u> | fourth | 54) <u> A </u> |
| E) Na^+ and Ca^{2+} ions diffuse through gap junctions into <u>cardiac muscle cell</u> | fifth | 55) <u> B </u> |

56-60. Place these events in the order they occur to cause contraction in a smooth muscle cell.

- | | | |
|---|--------|------------------|
| A) The myosin cross-bridges bind to actin | first | 56) <u> E </u> |
| B) ATP energizes and elongates myosin heads | second | 57) <u> D </u> |
| C) The myosin heads bend and pull actin toward M-lines | third | 58) <u> B </u> |
| D) MLC kinase phosphorylates (activates) the ATPase of myosin | fourth | 59) <u> A </u> |
| E) Myosin light chain (MLC) kinase is activated by calcium-calmodulin | fifth | 60) <u> C </u> |

61-65. Place these events in the order they occur during cross-bridge cycling in a skeletal muscle cell.

- | | | |
|---|--------|------------------|
| A) ATP binds to myosin and causes the myosin cross-bridge to release from actin | first | 61) <u> A </u> |
| B) The myosin cross-bridge recoils back to original shape (bends) and pulls actin | second | 62) <u> D </u> |
| C) ADP is released, but the myosin head remains bound to actin | third | 63) <u> E </u> |
| D) ATP binding energizes (elongates) the myosin cross-bridge | fourth | 64) <u> B </u> |
| E) The myosin cross-bridge binds with the actin | fifth | 65) <u> C </u> |

66-70. Matching

- | | | |
|----------------------|---|------------------|
| A) Large motor units | Generally control gross movement | 66) <u> A </u> |
| B) Small motor units | Generally control precise movement | 67) <u> B </u> |
| C) A and B | Include a gamma motor neuron and muscle spindle cells | 68) <u> C </u> |
| | Small alpha motor neurons connected to few skeletal muscle cells | 69) <u> B </u> |
| | Large alpha motor neurons connected to many skeletal muscle cells | 70) <u> A </u> |

71-75. Place these events in the order they occur in response to stimulation of an alpha motor neuron.

- | | | |
|---|--------|------------------|
| A) Synaptic vesicles fuse to presynaptic membrane of motor neuron | first | 71) <u> D </u> |
| B) Acetylcholine is released from synaptic bulb of motor neuron | second | 72) <u> C </u> |
| C) Action potential is generated at axon hillock and into axon | third | 73) <u> E </u> |
| D) Dendrites of motor neuron respond to glutamate | fourth | 74) <u> A </u> |
| E) Ca^{2+} enter synaptic bulb of motor neuron | fifth | 75) <u> B </u> |

76-80. Place the following in the order that signals from muscle spindles travel to cause muscle contraction.

- | | | |
|--|--------|------------------|
| A) Skeletal muscle cells | first | 76) <u> D </u> |
| B) Posterior horn of spinal cord | second | 77) <u> C </u> |
| C) Muscle spindle sensory neurons | third | 78) <u> B </u> |
| D) Stretch receptors around muscle spindles | fourth | 79) <u> E </u> |
| E) Alpha motor neurons in anterior horn of spinal cord | fifth | 80) <u> A </u> |

81-85. Place the following in the order that signals from nociceptors travel to cause muscle contraction.

- | | | |
|---|--------|------------------|
| A) Limb flexor muscles | first | 81) <u> C </u> |
| B) Posterior horn of spinal cord | second | 82) <u> B </u> |
| C) Cutaneous nociceptor neurons | third | 83) <u> E </u> |
| D) Alpha motor neurons in anterior horn of spinal cord | fourth | 84) <u> D </u> |
| E) Excitatory and inhibitory interneuron in posterior horn of spinal cord | fifth | 85) <u> A </u> |

86-90. Matching

- | | | |
|---|------------------------|------------------|
| A) Control distal and precision muscles | Small motor units | 86) <u> A </u> |
| B) Control axial and postural muscles | Large motor units | 87) <u> B </u> |
| | Corticospinal tract | 88) <u> A </u> |
| | Medial motor pathways | 89) <u> B </u> |
| | Lateral motor pathways | 90) <u> A </u> |

91-95. Matching

- | | | |
|---------------------------|---|------------------|
| A) Lateral motor pathways | Include the corticospinal tract | 91) <u> A </u> |
| B) Medial motor pathways | Control axial and postural muscles | 92) <u> B </u> |
| | Control distal and fine (precision) muscles | 93) <u> A </u> |
| | Include the vestibulospinal tract for control of balance | 94) <u> B </u> |
| | Include the tectospinal tract for control of orientation of head and eyes | 95) <u> B </u> |

Fill in

1. Low frequency sound is detected by the portions of the basilar membrane of the cochlea that are more flexible (characteristic)
2. Movement of the basilar membrane and/or tectorial membrane causes the stereocilia of the hair cells to move.
3. An image is focused on the retina by both the cornea and the lens.
4. The loss of elasticity of the lens with increasing age is called presbyopia.
5. Near sightedness is corrected with concave lenses.
6. Light striking the retina is detected by photoreceptor cells
7. Damage to the left optic tract would cause blindness in the right visual field.
8. Damage to the temporal lobe would interfere with perceiving the meaning of words.
9. An image is focused on the retina by refraction in the cornea and the lens.
10. Far vision becomes sharp when the ciliary muscle relaxes.

11. Near sightedness is corrected with **__(-) diopter / concave__** eyeglasses.
12. An abnormal growth of fibrous tissue of the eye lens, causing clouding, is called a **__cataract__**.
13. **__Acetylcholine__** binds to nicotinic-m receptors in the motor endplate of skeletal muscle cells.
14. Release of Ca^{2+} from the sarcoplasmic reticulum in skeletal muscle cells depends on the generation of **__action__** **__potentials__** in the sarcolemma and transverse tubules.
15. In **__skeletal__** and **__cardiac__** muscle, the ATPase of the heads of the myosin is always active and able to break apart ATP and energize the myosin.
16. In **__smooth__** muscle, the ATPase of the heads of the myosin is inactive and unable to break apart ATP until activation of the ATPase by myosin light chain (MLC) kinase.
17. In skeletal and cardiac muscle Ca^{2+} binds to **__troponin__** and uncovers actin.
18. In smooth muscle Ca^{2+} binds to **__calmodulin__** and activates MLC kinase, which in turn activates the **__ATPase__** of the myosin heads.
19. Binding of **__myosin__** (a protein) to **__actin__** (a protein) causes muscle contraction
20. The motor end plates of skeletal muscle cells are innervated by **__alpha__** motor neurons.
21. Skeletal muscle length is controlled largely by **__stretch__** reflexes.
22. Skeletal muscle length is measured by **__muscle__** **__spindle__** sensory neurons.
23. **__Gamma__** motor neurons stimulate the contraction of muscle spindles and thereby adjust the set point of muscle spindles
24. Withdrawal of a limb from noxious stimulation requires **__excitation__** of flexor motor neurons and **__inhibition__** of extensor motor neurons.
25. The **__vestibulospinal__** tract is involved in controlling muscles for posture in response to signals from the semicircular canals.
26. The **__tectospinal__** tract is involved in controlling muscles for movement of the head and trunk in response to signals from the eyes.
27. The **__reticulospinal__** tracts are involved in controlling the excitability (sensitivity) of alpha motor neurons in the spinal cord and brain stem.
28. The **__rubrospinal__** tract is involved in integrating the control of muscles located distally with the control of muscles located proximally.
29. The **__corticospinal__** tract is involved especially in the control of muscles located distally for precise movements.
30. The **__basal__** nuclei are involved in initiating the control of muscles in voluntary movements.
31. Abnormally low secretion of **__dopamine__** by the substantia nigra is associated with the loss of intentional control of movement, seen clinically as Parkinson's Disease.