

Multiple Choice Questions (MCQs) on Descending Tracts and Cerebellum ###
Functions

1. **Which part of the brain develops the order of voluntary movements?**

A) Parietal lobe -

B) Occipital lobe -

C) Frontal lobe -

D) Temporal lobe -

2. **Which areas of the brain are involved in modulating and modifying muscle performance during voluntary movements?**

A) Parietal lobe and temporal lobe -

B) Basal ganglia and cerebellum -

C) Occipital lobe and hippocampus -

D) Brainstem and thalamus -

3. **Where are the excitatory impulses for skeletal muscle movements sent from in the brain?**

(A) Motor area (4) and pre-motor area (6 -

(B) Sensory area (3) and auditory area (41 -

C) Visual cortex (17) and olfactory bulb -

D) Temporal lobe and parietal lobe -

4. **What are the two types of skeletal muscle contractions?**

A) Reflex and spontaneous -

B) Reflex and voluntary -

C) Involuntary and spontaneous -

D) Reflex and rhythmic -

5. **Which descending tract is responsible for initiating and facilitating isolated skilled voluntary movements?**

- A) Spinothalamic tract -
- B) Corticospinal tract -
- C) Pyramidal tract -
- D) Reticulospinal tract -

6. **What is the role of the pyramidal tract in muscle tone and reflexes?**

- A) Decreases muscle tone and inhibits deep reflexes -
- B) Increases muscle tone and facilitates deep reflexes -
- C) Maintains muscle tone and stimulates primitive reflexes -
- D) Reduces muscle tone and inhibits primitive reflexes -

7. **Which of the following is NOT an extra-pyramidal tract?**

- A) Reticulospinal tract -
- B) Vestibulospinal tract -
- C) Rubrospinal tract -
- D) Pyramidal tract -

8. **Where do the fibers of the reticulospinal tract originate?**

- A) Cerebellum -
- B) Red nucleus -
- C) Reticular formation in the brainstem -
- D) Inferior olivary nuclei -

9. **Which tract is primarily responsible for facilitating muscle tone and arises from the inferior olivary nuclei?**

- A) Rubrospinal tract -

- B) Olivospinal tract -
- C) Vestibulospinal tract -
- D) Tectospinal tract -

10. **What is the main function of the cerebellum's flocculo-nodular lobe?**

- A) Regulation of muscle tone -
- B) Control of equilibrium -
- C) Regulation of gross involuntary movements -
- D) Control of voluntary movements -

11. **Which part of the cerebellum is inhibitory to muscle tone?**

- A) Neo-cerebellum -
- B) Paleo-cerebellum -
- C) Flocculo-nodular lobe -
- D) Vestibular nuclei -

12. **Which cerebellar function is mainly associated with controlling the timing and progression of voluntary movements?**

- A) Control of equilibrium -
- B) Regulation of muscle tone -
- C) Control of ballistic movements -
- D) Control of voluntary movements -

13. **Which structure is involved in the regulation of gross involuntary movements through its connections with the basal ganglia?**

- A) Neo-cerebellum -
- B) Paleo-cerebellum -
- C) Flocculo-nodular lobe -

D) Vestibular nuclei -

14. **Which of the following extra-pyramidal tracts originates from the red nucleus in the midbrain?**

A) Tectospinal tract -

B) Rubrospinal tract -

C) Vestibulospinal tract -

D) Reticulospinal tract -

15. **Which extra-pyramidal tract originates from the superior colliculus of the midbrain?**

A) Rubrospinal tract -

B) Reticulospinal tract -

C) Olivospinal tract -

D) Tectospinal tract -

16. **What is the significance of the myelination of the pyramidal tract fibers?**

A) It is complete at birth -

B) It becomes complete one year after birth -

C) It is absent in infants -

D) It is only present in adults -

17. **Which area of the brain contains Betz cells whose axons form the pyramidal tract?**

A) Area 4 -

B) Area 6 -

C) Area 17 -

D) Area 22 -

18. **What is Babinski's sign, and how is it related to the pyramidal tract?**

- A) A sign of increased muscle tone facilitated by the pyramidal tract -
- B) A primitive withdrawal reflex inhibited by the pyramidal tract -
- C) A sign of voluntary movement initiation by the pyramidal tract -
- D) A reflex movement controlled by the extra-pyramidal tract -

19. **Which extra-pyramidal tract arises from the vestibular nuclei?**

- A) Tectospinal tract -
- B) Rubrospinal tract -
- C) Reticulospinal tract -
- D) Vestibulospinal tract -

20. **What is the primary role of the cerebellum in ballistic movements?**

- A) Controlling the initiation of movements -
- B) Regulating muscle tone -
- C) Controlling the timing and progression of rapid movements -
- D) Maintaining equilibrium -

21. **Which extra-pyramidal tract ends around the anterior horn cells till the cervical region only?**

- A) Rubrospinal tract -
- B) Olivospinal tract -
- C) Reticulospinal tract -
- D) Tectospinal tract -

22. **Which of the following is NOT a function of the cerebellum?**

- A) Control of equilibrium -
- B) Regulation of muscle tone -

C) Regulation of gross involuntary movements -

D) Initiation of voluntary movements -

23. **Where do the motor association areas that develop the order of movement reside?**

A) Parietal lobe -

B) Occipital lobe -

C) Frontal lobe -

D) Temporal lobe -

24. **Which brain structure assists the flocculo-nodular lobe in controlling equilibrium?**

A) Basal ganglia -

B) Labyrinth through the vestibular nuclei -

C) Red nucleus -

D) Inferior olivary nuclei -

25. **What is the role of the neo-cerebellum in muscle tone?**

A) Inhibitory to muscle tone -

B) Excitatory to muscle tone -

C) Does not affect muscle tone -

D) Both inhibitory and excitatory -

26. **Which tracts are classified as part of the extra-pyramidal system?**

A) Corticospinal tracts -

B) Dorsal column-medial lemniscus tracts -

C) Reticulospinal and rubrospinal tracts -

D) Spinothalamic tracts -

27. **Which brain areas are involved in the final excitation of skeletal muscles for voluntary movements?**

- A) Sensory areas -
- (B) Motor area (4) and pre-motor area (6 -
- C) Visual cortex -
- D) Auditory cortex -

28. **Which tract originates from the reticular formation in the brainstem?**

- A) Corticospinal tract -
- B) Rubrospinal tract -
- C) Reticulospinal tract -
- D) Vestibulospinal tract -

29. **Which of the following is a function of the flocculo-nodular lobe?**

- A) Regulation of muscle tone -
- B) Control of equilibrium -
- C) Regulation of involuntary movements -
- D) Control of ballistic movements -

30. **Which descending tract contains axons of Betz cells?**

- A) Rubrospinal tract -
- B) Corticospinal tract -
- C) Pyramidal tract -
- D) Reticulospinal tract -

31. **Which cerebellar lobe is mainly responsible for controlling equilibrium?**

- A) Anterior lobe -

B) Posterior lobe -

C) Flocculo-nodular lobe -

D) Vermis -

32. **What is the function of the lateral and medial tecto-spinal tracts?**

A) Regulate muscle tone -

B) Control equilibrium -

C) Facilitate voluntary movements -

D) Control movements in response to visual and auditory stimuli -

33. **Which tracts originate from the superior and inferior colliculi of the midbrain?**

A) Reticulospinal tracts -

B) Tectospinal tracts -

C) Rubrospinal tracts -

D) Vestibulospinal tracts -

Certainly! Here are the answers to the multiple-choice questions:

1. **C) Frontal lobe**

2. **B) Basal ganglia and cerebellum**

3. **A) Motor area (4) and pre-motor area (6)**

4. **B) Reflex and voluntary**

5. **C) Pyramidal tract**

6. **B) Increases muscle tone and facilitates deep reflexes**

7. **D) Pyramidal tract**

8. **C) Reticular formation in the brainstem**

9. **B) Olivospinal tract**

10. **B) Control of equilibrium**
11. **B) Paleo-cerebellum**
12. **D) Control of voluntary movements**
 13. **B) Paleo-cerebellum**
 14. **B) Rubrospinal tract**
 15. **D) Tectospinal tract**
16. **B) It becomes complete one year after birth**
 17. **A) Area 4**
18. **B) A primitive withdrawal reflex inhibited by the pyramidal tract**
 19. **D) Vestibulospinal tract**
20. **C) Controlling the timing and progression of rapid movements**
 21. **B) Olivospinal tract**
22. **D) Initiation of voluntary movements**
 23. **C) Frontal lobe**
24. **B) Labyrinth through the vestibular nuclei**
 25. **B) Excitatory to muscle tone**
26. **C) Reticulospinal and rubrospinal tracts**
27. **B) Motor area (4) and pre-motor area (6)**
 28. **C) Reticulospinal tract**
29. **B) Control of equilibrium**
 30. **C) Pyramidal tract**
31. **C) Flocculo-nodular lobe**
32. **D) Control movements in response to visual and auditory stimuli**
 33. **B) Tectospinal tracts**

These answers provide a comprehensive understanding of the descending tracts, their functions, and the role of the cerebellum

.Certainly! Here are more questions based on the provided lesson:

34. **Which type of skeletal muscle contractions are exemplified by writing or doing skilled movements?**

- A) Reflex contractions -
- B) Voluntary contractions -
- C) Involuntary contractions -
- D) Spontaneous contractions -

35. **What percentage of fibers in the pyramidal tract are myelinated?**

- A) 30% -
- B) 50% -
- C) 60% -
- D) 80% -

36. **Which part of the motor area contains the Betz cells?**

- A) 1st layer -
- B) 3rd layer -
- C) 5th layer -
- D) 6th layer -

37. **Which cerebellar function involves regulating muscle tone through inhibitory and excitatory actions?**

- A) Control of equilibrium -
- B) Regulation of the muscle tone -
- C) Control of voluntary movements -
- D) Role in ballistic movement -

38. **Which descending tract is responsible for controlling voluntary movements, especially those requiring training and education?**

- A) Pyramidal tract -
- B) Reticulospinal tract -
- C) Rubrospinal tract -
- D) Olivospinal tract -

39. **Where do the reticulospinal tracts originate and terminate?**

- A) Reticular formation in the brainstem to anterior horn cells -
- B) Vestibular nuclei to anterior horn cells -
- C) Red nucleus to anterior horn cells -
- D) Inferior olivary nuclei to anterior horn cells -

40. **What is the main function of the rubrospinal tract?**

- A) Regulate muscle tone -
- B) Facilitate voluntary movements -
- C) Control equilibrium -
- D) Modulate reflexes -

41. **Which of the following tracts arises from the vestibular nuclei?**

- A) Rubrospinal tract -
- B) Tectospinal tract -
- C) Reticulospinal tract -
- D) Vestibulospinal tract -

42. **Which extra-pyramidal tract ends around the anterior horn cells till the cervical region?**

- A) Tectospinal tract -

B) Rubrospinal tract -

C) Olivospinal tract -

D) Reticulospinal tract -

43. **Which type of cerebellar movement control is involved in rapid movements such as typing?**

A) Control of equilibrium -

B) Regulation of muscle tone -

C) Control of ballistic movements -

D) Regulation of gross involuntary movements -

44. **Which area of the brain sends excitatory impulses to skeletal muscles to carry out movements?**

(A) Sensory area (1, 2, 3 -

(B) Visual area (17 -

(C) Motor area (4) and pre-motor area (6 -

(D) Auditory area (41, 42 -

45. **Which tracts are responsible for controlling movements in response to visual and auditory stimuli?**

A) Reticulospinal tracts -

B) Tectospinal tracts -

C) Rubrospinal tracts -

D) Vestibulospinal tracts -

46. **Which tracts are classified under the extra-pyramidal system and influence gamma cells and anterior horn cells?**

A) Corticospinal tracts -

B) Dorsal column tracts -

C) Reticulospinal and vestibulospinal tracts -

D) Spinothalamic tracts -

47. **Which part of the brain is mainly responsible for controlling the timing and progression from one movement to another?**

A) Frontal lobe -

B) Parietal lobe -

C) Occipital lobe -

D) Cerebellum -

48. **Which cerebellar function involves the neo-cerebellum being excitatory to muscle tone?**

A) Control of equilibrium -

B) Regulation of muscle tone -

C) Control of voluntary movements -

D) Regulation of gross involuntary movements -

49. **Which extra-pyramidal tract arises from the inferior colliculus of the midbrain?**

A) Rubrospinal tract -

B) Tectospinal tract -

C) Reticulospinal tract -

D) Olivospinal tract -

50. **What is the role of the vestibulo-spinal tract?**

A) Facilitates voluntary movements -

B) Controls equilibrium and balance -

C) Inhibits muscle tone -

D) Regulates sensory input -

:Answers ###

34. **B) Voluntary contractions**
35. **C) 60%**
36. **C) 5th layer**
37. **B) Regulation of the muscle tone**
38. **A) Pyramidal tract**
39. **A) Reticular formation in the brainstem to anterior horn cells**
40. **B) Facilitate voluntary movements**
41. **D) Vestibulospinal tract**
42. **C) Olivospinal tract**
43. **C) Control of ballistic movements**
44. **C) Motor area (4) and pre-motor area (6)**
45. **B) Tectospinal tracts**
46. **C) Reticulospinal and vestibulospinal tracts**
47. **D) Cerebellum**
48. **B) Regulation of muscle tone**
49. **B) Tectospinal tract**
50. **B) Controls equilibrium and balance**

These additional questions should provide a more comprehensive review of the lesson on descending tracts and cerebellum functions.

Of course! Here are some more questions:

51. **What is the function of the rubrospinal tract?**
A) Facilitates voluntary movements -

- B) Controls equilibrium -
- C) Inhibits muscle tone -
- D) Regulates sensory input -

52. **Which part of the brain sends excitatory impulses to skeletal muscles to carry out movements?**

- (A) Sensory area (1, 2, 3 -
- (B) Visual area (17 -
- (C) Motor area (4) and pre-motor area (6 -
- (D) Auditory area (41, 42 -

53. **Which tracts are responsible for controlling movements in response to visual and auditory stimuli?**

- A) Reticulospinal tracts -
- B) Tectospinal tracts -
- C) Rubrospinal tracts -
- D) Vestibulospinal tracts -

54. **Which tracts are classified under the extra-pyramidal system and influence gamma cells and anterior horn cells?**

- A) Corticospinal tracts -
- B) Dorsal column tracts -
- C) Reticulospinal and vestibulospinal tracts -
- D) Spinothalamic tracts -

55. **Which part of the brain is mainly responsible for controlling the timing and progression from one movement to another?**

- A) Frontal lobe -
- B) Parietal lobe -

C) Occipital lobe -

D) Cerebellum -

56. **Which cerebellar function involves the neo-cerebellum being excitatory to muscle tone?**

A) Control of equilibrium -

B) Regulation of muscle tone -

C) Control of voluntary movements -

D) Regulation of gross involuntary movements -

57. **Which extra-pyramidal tract arises from the inferior colliculus of the midbrain?**

A) Rubrospinal tract -

B) Tectospinal tract -

C) Reticulospinal tract -

D) Olivospinal tract -

58. **What is the role of the vestibulo-spinal tract?**

A) Facilitates voluntary movements -

B) Controls equilibrium and balance -

C) Inhibits muscle tone -

D) Regulates sensory input -

59. **Which tracts are classified as part of the extra-pyramidal system?**

A) Corticospinal tracts -

B) Dorsal column-medial lemniscus tracts -

C) Reticulospinal and rubrospinal tracts -

D) Spinothalamic tracts -

60. **Which area of the brain sends excitatory impulses to skeletal muscles to carry out movements?**

(A) Sensory area (1, 2, 3 -

(B) Visual area (17 -

(C) Motor area (4) and pre-motor area (6 -

(D) Auditory area (41, 42 -

:Answers ###

51. **A) Facilitates voluntary movements**

52. **C) Motor area (4) and pre-motor area (6)**

53. **B) Tectospinal tracts**

54. **C) Reticulospinal and vestibulospinal tracts**

55. **D) Cerebellum**

56. **B) Regulation of muscle tone**

57. **B) Tectospinal tract**

58. **B) Controls equilibrium and balance**

59. **C) Reticulospinal and rubrospinal tracts**

60. **C) Motor area (4) and pre-motor area (6)**

Feel free to ask if you need more questions or any further clarification!

Absolutely! Here are some additional questions for you:

61. **What is the function of the reticulospinal tracts?**

A) Control of equilibrium -

B) Facilitate voluntary movements -

C) Modulate muscle tone and reflexes -

D) Regulate sensory input -

62. **Which tract originates from the red nucleus in the midbrain?**

A) Rubrospinal tract -

B) Tectospinal tract -

C) Reticulospinal tract -

D) Vestibulospinal tract -

63. **Which part of the brain is responsible for controlling the timing and coordination of movements?**

A) Frontal lobe -

B) Parietal lobe -

C) Occipital lobe -

D) Cerebellum -

64. **What is the role of the cerebellum in ballistic movements?**

A) Control of equilibrium -

B) Regulation of muscle tone -

C) Control of rapid movements -

D) Regulation of gross involuntary movements -

65. **Which tract is responsible for controlling movements in response to auditory stimuli?**

A) Reticulospinal tract -

B) Tectospinal tract -

C) Rubrospinal tract -

D) Vestibulospinal tract -

66. **Which tracts influence gamma cells and anterior horn cells in the spinal cord?**

- A) Corticospinal tracts -
- B) Dorsal column tracts -
- C) Reticulospinal and vestibulospinal tracts -
- D) Spinothalamic tracts -

67. **Which part of the brain sends excitatory impulses to skeletal muscles to carry out movements?**

- (A) Sensory area (1, 2, 3 -
- (B) Visual area (17 -
- (C) Motor area (4) and pre-motor area (6 -
- (D) Auditory area (41, 42 -

68. **Which tracts are classified as part of the extra-pyramidal system?**

- A) Corticospinal tracts -
- B) Dorsal column-medial lemniscus tracts -
- C) Reticulospinal and rubrospinal tracts -
- D) Spinothalamic tracts -

69. **Which tract originates from the inferior olivary nuclei in the medulla?**

- A) Rubrospinal tract -
- B) Tectospinal tract -
- C) Reticulospinal tract -
- D) Olivospinal tract -

70. **What is the primary function of the vestibulospinal tract?**

- A) Facilitates voluntary movements -

B) Controls equilibrium and balance -

C) Inhibits muscle tone -

D) Regulates sensory input -

:Answers ###

61. **C) Modulate muscle tone and reflexes**

62. **A) Rubrospinal tract**

63. **D) Cerebellum**

64. **C) Control of rapid movements**

65. **B) Tectospinal tract**

66. **C) Reticulospinal and vestibulospinal tracts**

67. **C) Motor area (4) and pre-motor area (6)**

68. **C) Reticulospinal and rubrospinal tracts**

69. **D) Olivospinal tract**

70. **B) Controls equilibrium and balance**

Feel free to let me know if you need more questions or any further assistance!