

Advanced CNS Lecture 2 Questions

Part I: True or False Questions

1. The dura mater lies directly in contact with the brain surface.
2. The subarachnoid space lies between the arachnoid and the pia mater.
3. The pia mater contains large venous sinuses of the brain.
4. The cerebrum is responsible for both sensory perception and voluntary motor control.
5. The parietal lobe primarily controls muscle coordination.
6. Gyri are the grooves while sulci are the raised ridges of the brain.
7. The gray matter of the cerebrum is composed mainly of neuron cell bodies.
8. The arrangement of gray and white matter is identical in the cerebrum and spinal cord.
9. The thalamus functions mainly as a relay center for sensory signals.
10. The hypothalamus controls temperature and hormone secretions.
11. The pineal gland secretes melatonin which regulates daily sleep cycles.
12. The cerebellum is responsible for emotional control and language processing.
13. The vermis connects the two hemispheres of the cerebellum.
14. The cerebellum lies anterior to the brainstem and above the cerebrum.
15. The fourth ventricle separates the cerebellum from the brainstem.
16. The brainstem connects the spinal cord to the cerebellum only.
17. The midbrain, pons, and medulla oblongata together form the brainstem.
18. Dopamine released from the substantia nigra influences voluntary movement.
19. The decussation of the pyramids explains why each brain hemisphere controls the same side of the body.
20. The medulla oblongata contains centers controlling breathing and heart rate.
21. The spinal cord ends at the lower border of L1 in adults.
22. The filum terminale is an extension of the dura mater anchoring the spinal cord.

- 23. The spinal cord contains 31 pairs of nerves emerging from its segments.
- 24. The cauda equina consists of nerve fibers extending below the spinal cord termination.
- 25. The conus medullaris represents the tapered lower end of the spinal cord.
- 26. The cervical and lumbar enlargements give rise to major nerve plexuses.
- 27. The gray matter of the spinal cord is located on the periphery, surrounding the white matter.
- 28. The trigeminal nerve carries only motor fibers controlling chewing.
- 29. The vagus nerve provides innervation to internal organs.
- 30. The sciatic nerve is the smallest peripheral nerve in the body.

Part II: Multiple Choice Questions

- 31. Which meningeal layer contains venous sinuses?
 - A) Pia mater
 - B) Dura mater
 - C) Arachnoid mater
 - D) Epidural space
- 32. The subarachnoid space is filled with:
 - A) Blood
 - B) Cerebrospinal fluid
 - C) Fat
 - D) Air
- 33. Which lobe of the cerebrum is mainly responsible for vision?
 - A) Frontal
 - B) Temporal
 - C) Parietal
 - D) Occipital
- 34. The cerebral cortex is referred to as gray matter because:
 - A) It lacks axons
 - B) It contains neuron cell bodies
 - C) It contains only white fibers
 - D) It has a myelin sheath
- 35. The diencephalon includes all of the following except:

- A) Thalamus
- B) Hypothalamus
- C) Epithalamus
- D) Midbrain

36. The hypothalamus is responsible for:

- A) Controlling voluntary movement
- B) Regulating endocrine functions
- C) Memory storage
- D) Vision control

37. Melatonin is secreted by the:

- A) Pituitary gland
- B) Pineal gland
- C) Hypothalamus
- D) Cerebellum

38. The main function of the cerebellum is to:

- A) Process emotions
- B) Coordinate movements
- C) Control hormones
- D) Store memories

39. The part of the brain that connects the cerebrum with the spinal cord is the:

- A) Thalamus
- B) Brainstem
- C) Cerebellum
- D) Pons

40. The substantia nigra is located in the:

- A) Pons
- B) Medulla oblongata
- C) Midbrain
- D) Hypothalamus

41. A lesion in the substantia nigra results in:

- A) Memory loss
- B) Parkinson's disease
- C) Epilepsy
- D) Loss of smell

42. The pyramids in the medulla are formed by:

- A) Sensory fibers
- B) Motor tracts
- C) Commissural fibers
- D) Ascending tracts

43. The decussation of the pyramids causes:

- A) Ipsilateral control
- B) Contralateral control
- C) No control
- D) Reflex movement

44. The fourth ventricle is located between the:

- A) Cerebrum and cerebellum
- B) Brainstem and cerebellum
- C) Thalamus and midbrain
- D) Pons and hypothalamus

45. The spinal cord terminates in adults at:

- A) L3
- B) L5
- C) L1
- D) S1

46. The conus medullaris is found at the:

- A) Upper cervical region
- B) Lower thoracic region
- C) Terminal end of the spinal cord
- D) Brainstem

47. The cauda equina consists of:

- A) Blood vessels
- B) Nerve fibers
- C) Ligaments
- D) Glial cells

48. Which nerve supplies the muscles of facial expression?

- A) Trigeminal
- B) Facial
- C) Accessory
- D) Hypoglossal

49. The vagus nerve carries:

- A) Sensory only
- B) Motor only
- C) Both sensory and motor fibers
- D) None

50. The largest nerve in the body is the:

- A) Sciatic nerve
- B) Phrenic nerve
- C) Femoral nerve
- D) Radial nerve

51. The cervical enlargement gives rise to:

- A) Sciatic nerve
- B) Cervical and brachial plexuses
- C) Sacral plexus
- D) Lumbar plexus

52. Which cranial nerve is responsible for smell?

- A) Optic
- B) Olfactory
- C) Trigeminal
- D) Glossopharyngeal

53. Which cranial nerve controls eye movement?

- A) Trochlear
- B) Facial
- C) Vagus
- D) Vestibulocochlear

54. The glossopharyngeal nerve carries taste from:

- A) Anterior 2/3 of tongue
- B) Posterior 1/3 of tongue
- C) Palate
- D) Epiglottis

55. The phrenic nerve originates from which plexus?

- A) Brachial
- B) Cervical
- C) Lumbar

D) Sacral

56. The lumbar plexus gives rise to:

- A) Obturator and femoral nerves
- B) Phrenic and radial nerves
- C) Ulnar and median nerves
- D) Sciatic nerve

57. Which cranial nerve controls hearing and equilibrium?

- A) Vestibulocochlear
- B) Vagus
- C) Accessory
- D) Oculomotor

58. The medulla controls which vital function?

- A) Blood pressure
- B) Vision
- C) Memory
- D) Smell

59. The arachnoid mater is separated from the dura mater by:

- A) Subdural space
- B) Subarachnoid space
- C) Epidural space
- D) Lateral ventricle

60. The filum terminale is an extension of:

- A) Pia mater
- B) Dura mater
- C) Arachnoid mater
- D) White matter

Answers

- 1. False
- 2. True
- 3. False
- 4. True
- 5. False

6. False
7. True
8. False
9. True
10. True
11. True
12. False
13. True
14. False
15. True
16. False
17. True
18. True
19. False
20. True
21. True
22. False
23. True
24. True
25. True
26. True
27. False
28. False
29. True
30. False
31. B
32. B
33. D
34. B

35. D

36. B

37. B

38. B

39. B

40. C

41. B

42. B

43. B

44. B

45. C

46. C

47. B

48. B

49. C

50. A

51. B

52. B

53. A

54. B

55. B

56. A

57. A

58. A

59. A

60. A