

CHAPTER – 9: Neural Control and Coordination

Questions:

1. What is the functional unit of the nervous system?
 - a) Muscle fiber
 - Neuron
 - c) Axon
 - d) Dendrite
2. Which part of the neuron carries impulses away from the cell body?
 - a) Dendrites
 - b) Synapse
 - c) Axon
 - d) Myelin sheath
3. What is the primary function of the central nervous system (CNS)?
 - a) Transmit sensory information
 - b) Control reflexes
 - c) Process and integrate information
 - d) Produce hormones
4. Which cells form the myelin sheath in the central nervous system?
 - a) Schwann cells
 - b) Oligodendrocytes
 - c) Astrocytes
 - d) Microglia
5. Which of the following is responsible for transmitting impulses from the CNS to muscles?
 - a) Sensory neurons
 - b) Motor neurons
 - c) Interneurons
 - d) Glial cells
6. What is the role of the synapse in neural communication?
 - a) Speed up impulse transmission

- b) Store neurotransmitters
 - c) Transmit impulses between neurons
 - d) Protect neurons from damage
7. Which part of the brain controls voluntary movement?
- a) Cerebellum
 - b) Cerebrum
 - c) Medulla oblongata
 - d) Hypothalamus
8. What is the function of the medulla oblongata?
- a) Regulate heart rate and breathing
 - b) Control memory and learning
 - c) Coordinate balance and posture
 - d) Control voluntary movement
9. Which part of the nervous system controls involuntary actions such as heart rate and digestion?
- a) Somatic nervous system
 - b) Autonomic nervous system
 - c) Peripheral nervous system
 - d) Central nervous system
10. Which of the following is a neurotransmitter?
- a) Actin
 - b) Myosin
 - c) Acetylcholine
 - d) Keratin
11. What is the gap between two neurons called?
- a) Axon
 - b) Dendrite
 - c) Synaptic cleft
 - d) Node of Ranvier
12. Which lobe of the brain is primarily responsible for processing visual information?

- a) Frontal lobe
- b) Parietal lobe
- c) Occipital lobe
- d) Temporal lobe

13. What is the role of the cerebellum in the nervous system?

- a) Control emotions
- b) Regulate body temperature
- c) Coordinate muscle movements and balance
- d) Control speech and language

14. Which of the following is part of the peripheral nervous system?

- a) Brain
- b) Spinal cord
- c) Cranial and spinal nerves
- d) Thalamus

15. What is the function of the autonomic nervous system?

- a) Control voluntary muscles
- b) Control involuntary functions like heartbeat and digestion
- c) Transmit sensory signals
- d) Coordinate reflex actions

16. Which type of neuron transmits impulses from sensory receptors to the CNS?

- a) Motor neuron
- b) Interneuron
- c) Sensory neuron
- d) Glial cell

17. What is the function of the myelin sheath?

- a) Protect neurons from injury
- b) Store neurotransmitters
- c) Insulate axons and increase impulse speed
- d) Remove waste products

18. Which part of the brain is responsible for regulating hunger, thirst, and body temperature?

- a) Thalamus
 - b) Cerebellum
 - c) Hypothalamus
 - d) Medulla oblongata
19. What is the primary function of the spinalcord?
- a) Control higher cognitive functions
 - b) Transmit signals between the brain andbody
 - c) Produce hormones
 - d) Regulate involuntary reflexes
20. Which nervous system division is responsible for the "fight or flight" response?
- a) Parasympathetic nervous system
 - b) Sympathetic nervous system
 - c) Somatic nervous system
 - d) Central nervous system
21. What is the role of sensory receptors in thebody?
- a) Transmit motor impulses
 - b) Detect changes in the environment andsend signals to the CNS
 - c) Store neurotransmitters
 - d) Insulate axons
22. Which type of glial cell is responsible forforming the blood-brain barrier?
- a) Oligodendrocytes
 - b) Schwann cells
 - c) Astrocytes
 - d) Microglia
23. Which neurotransmitter is primarilyinvolved in muscle contraction?
- a) Dopamine
 - b) Acetylcholine
 - c) Serotonin
 - d) GABA
24. What is the function of the corpuscallosum?

- a) Coordinate balance and movement
 - b) Connect the two hemispheres of the brain
 - c) Control involuntary actions
 - d) Process sensory information
25. Which type of neuron is located entirely within the central nervous system?
- a) Sensory neuron
 - b) Motor neuron
 - c) Interneuron
 - d) Glial cell
26. Which lobe of the brain is associated with reasoning and problem-solving?
- a) Occipital lobe
 - b) Temporal lobe
 - c) Frontal lobe
 - d) Parietal lobe
27. What is the primary role of the parasympathetic nervous system?
- a) Prepare the body for emergencies
 - b) Stimulate digestion and rest functions
 - c) Increase heart rate and blood pressure
 - d) Control voluntary movements
28. Which part of the brainstem regulates breathing and heart rate?
- a) Pons
 - b) Midbrain
 - c) Medulla oblongata
 - d) Cerebellum
29. Which structure relays sensory signals to the appropriate areas of the brain?
- a) Hypothalamus
 - b) Thalamus
 - c) Cerebellum
 - d) Medulla oblongata
30. Which of the following is involved in memory and learning?
- a) Medulla oblongata

- b) Cerebellum
- c) Hippocampus
- d) Pons

31. What is the role of the sodium-potassium pump in a neuron?

- a) Store neurotransmitters
- b) Generate action potentials
- c) Maintain the resting membrane potential
- d) Transmit impulses across the synapse

32. Which type of reflex does not involve the brain?

- a) Voluntary reflex
- b) Spinal reflex
- c) Cranial reflex
- d) Involuntary reflex

33. Which neurotransmitter is associated with mood regulation and is often linked to depression?

- a) Dopamine
- b) Serotonin
- c) Acetylcholine
- d) Glutamate

34. What is the role of the motor cortex?

- a) Control sensory perception
- b) Regulate involuntary actions
- c) Control voluntary movements
- d) Regulate emotions

35. Which structure in the ear is responsible for detecting sound vibrations?

- a) Cochlea
- b) Eustachian tube
- c) Semicircular canals
- d) Vestibule

36. What is the primary function of the sensory cortex?

- a) Control voluntary movements

- b) Interpret sensory information
- c) Regulate balance
- d) Control reflexes

37. Which of the following is a characteristic of a neuron at rest?

- a) It has a positive charge inside
- b) It has a negative charge inside
- c) It generates action potentials
- d) It releases neurotransmitters

38. Which structure in the eye regulates the amount of light entering the eye?

- a) Lens
- b) Cornea
- c) Pupil
- d) Retina

39. What is the role of the pons in the brainstem?

- a) Regulate heart rate
- b) Control breathing rhythm
- c) Process visual information
- d) Coordinate voluntary movement

40. Which structure of the neuron receives incoming signals?

- a) Axon
- b) Dendrite
- c) Synapse
- d) Node of Ranvier

41. What is the role of GABA

(gamma-aminobutyric acid) in the brain?

- a) Excitatory neurotransmitter
- b) Inhibitory neurotransmitter
- c) Increase heart rate
- d) Enhance muscle contraction

42. What is the main role of the thalamus?

- a) Control motor movements

- b) Relay sensory information to the cerebral cortex
 - c) Regulate emotions
 - d) Maintain balance
43. Which part of the brain is responsible for processing auditory information?
- a) Occipital lobe
 - b) Temporal lobe
 - c) Parietal lobe
 - d) Frontal lobe
44. Which structure in the brain controls thirst and hunger?
- a) Hypothalamus
 - b) Thalamus
 - c) Medulla oblongata
 - d) Cerebrum
45. Which nervous system division is responsible for reflex actions?
- a) Somatic nervous system
 - b) Autonomic nervous system
 - c) Central nervous system
 - d) Peripheral nervous system
46. Which structure connects the left and right hemispheres of the brain?
- a) Cerebellum
 - b) Corpus callosum
 - c) Hypothalamus
 - d) Pons
47. What is the function of the vestibular system in the inner ear?
- a) Detect sound vibrations
 - b) Regulate balance and spatial orientation
 - c) Process visual signals
 - d) Control motor functions
48. Which part of the brain is responsible for regulating circadian rhythms?
- a) Thalamus
 - b) Pineal gland
 - c) Hypothalamus

d) Cerebellum

49. Which structure in the eye is responsible for focusing light onto the retina?

a) Pupil

b) Lens

c) Cornea

d) Iris

50. Which neurotransmitter is involved in the reward and pleasure system of the brain?

a) Serotonin

b) Dopamine

c) GABA

d) Acetylcholine

Answer key

1	2	3	4	5
B	C	C	B	B
6	7	8	9	10
C	B	A	B	C
11	12	13	14	15
C	C	C	C	B
16	17	18	19	20
C	C	C	B	B
21	22	23	24	25
B	C	B	B	C
26	27	28	29	30
C	B	C	B	C
31	32	33	34	35
C	B	B	C	A
36	37	38	39	40
B	B	C	B	B
41	42	43	44	45
B	B	B	A	A
46	47	48	49	50
B	B	B	B	B