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# Biology Grade 10 — Chapter 5

Nervous System

by Public Library

*Independent practice MCQs from the supplied Class 10 Biology notes pack. Total: 50 questions.*

## A. Important / Main Topics

**1. What is the change in the environment of an organism that causes it to react called?**

(A) Stimulus
(B) Response
(C) Reflex
(D) Impulse

**Correct Answer: A**

*Explanation: Any change in the environment of an organism is called a stimulus.*

**2. What is the structural and functional unit of the nervous system?**

(A) Nephron
(B) Neuron
(C) Alveolus
(D) Villus

**Correct Answer: B**

*Explanation: The structural and functional unit of the nervous system is the neuron.*

**3. Which part of the neuron contains the nucleus?**

(A) Axon
(B) Dendrite
(C) Cell body
(D) Myelin sheath

**Correct Answer: C**

*Explanation: Cell body — this correctly answers the question.*

**4. Which part of the neuron transmits impulses away from the cell body?**

(A) Dendrite
(B) Cell body
(C) Synapse
(D) Axon

**Correct Answer: D**

*Explanation: The axon transmits impulses away from the cell body.*

**5. What is the fatty covering around some axons called?**

(A) Myelin sheath
(B) Schwann cell
(C) Node of Ranvier
(D) Synapse

**Correct Answer: A**

*Explanation: Long neuron fibres are covered by a fatty myelin sheath.*

**6. What is the junction between two neurons called?**

(A) Node of Ranvier
(B) Synapse
(C) Dendrite
(D) Axon

**Correct Answer: B**

*Explanation: The junction between two neurons is called a synapse.*

**7. Which part of the brain controls balance and muscle coordination?**

(A) Cerebrum
(B) Medulla
(C) Cerebellum
(D) Thalamus

**Correct Answer: C**

*Explanation: Cerebellum — this correctly answers the question.*

**8. Which part of the brain controls involuntary processes like heartbeat and blood pressure?**

(A) Cerebrum
(B) Cerebellum
(C) Thalamus
(D) Medulla oblongata

**Correct Answer: D**

*Explanation: Medulla oblongata — this correctly answers the question.*

**9. How many pairs of cranial nerves are there in the human body?**

(A) 12
(B) 31
(C) 10
(D) 21

**Correct Answer: A**

*Explanation: There are 12 pairs of cranial nerves in the human body.*

**10. How many pairs of spinal nerves are there in the human body?**

(A) 12
(B) 31
(C) 10
(D) 21

**Correct Answer: B**

*Explanation: There are 31 pairs of spinal nerves in the human body.*

**11. Which division of the autonomic nervous system prepares the body for fight or flight?**

(A) Somatic
(B) Parasympathetic
(C) Sympathetic
(D) Central

**Correct Answer: C**

*Explanation: The sympathetic system prepares the body for fight or flight response.*

**12. Which division of the autonomic nervous system returns the body to normal after an emergency?**

(A) Somatic
(B) Sympathetic
(C) Central
(D) Parasympathetic

**Correct Answer: D**

*Explanation: Parasympathetic — this correctly answers the question.*

**13. Which gland is called the master gland?**

(A) Pituitary gland
(B) Thyroid gland
(C) Adrenal gland
(D) Pancreas

**Correct Answer: A**

*Explanation: The pituitary gland is called the master gland because it controls the.*

**14. Which hormone lowers blood sugar?**

(A) Glucagon
(B) Insulin
(C) Adrenaline
(D) Thyroxin

**Correct Answer: B**

*Explanation: Insulin — this correctly answers the question.*

**15. Which hormone raises blood sugar?**

(A) Insulin
(B) Thyroxin
(C) Glucagon
(D) Calcitonin

**Correct Answer: C**

*Explanation: Glucagon — this correctly answers the question.*

**16. Which of the following is NOT a part of the central nervous system?**

(A) Brain
(B) Spinal cord
(C) None of the above
(D) Cranial nerves

**Correct Answer: D**

*Explanation: Cranial nerves are part of the peripheral nervous system, not the central nervous system.*

**17. What is the function of the myelin sheath?**

(A) Insulate the axon and increase speed of impulse
(B) Produce neurotransmitters
(C) Receive impulses
(D) Transmit impulses away from cell body

**Correct Answer: A**

*Explanation: Insulate the axon and increase speed of impulse — this correctly answers the question.*

**18. What are the gaps between consecutive Schwann cells called?**

(A) Synapses
(B) Nodes of Ranvier
(C) Dendrites
(D) Axon terminals

**Correct Answer: B**

*Explanation: Small gaps between consecutive Schwann cells are called nodes of Ranvier.*

**19. Which type of neuron carries impulses from receptors to the central nervous system?**

(A) Motor neuron
(B) Interneuron
(C) Sensory neuron
(D) None of the above

**Correct Answer: C**

*Explanation: Sensory neurons carry sensory information from receptors to the brain and spinal cord.*

**20. Which type of neuron carries impulses from the central nervous system to effectors?**

(A) Sensory neuron
(B) Interneuron
(C) None of the above
(D) Motor neuron

**Correct Answer: D**

*Explanation: Motor neurons carry impulses from the brain and spinal cord to the effectors.*

**21. Which type of neuron connects sensory and motor neurons?**

(A) Interneuron
(B) Sensory neuron
(C) Motor neuron
(D) None of the above

**Correct Answer: A**

*Explanation: Interneuron — this correctly answers the question.*

**22. What is the resting potential of a neuron?**

(A) Inside positive, outside negative
(B) Inside negative, outside positive
(C) Inside and outside both positive
(D) Inside and outside both negative

**Correct Answer: B**

*Explanation: During resting potential, the inside of the neuron is negatively charged compared to the extracellular fluid.*

**23. What causes the action potential?**

(A) Potassium ions entering the cell
(B) Calcium ions leaving the cell
(C) Sodium ions entering the cell
(D) Chloride ions entering the cell

**Correct Answer: C**

*Explanation: The action potential begins when sodium ion channels open, allowing positive sodium ions to flow back into the cell.*

**24. Which part of the brain is the largest?**

(A) Cerebellum
(B) Medulla
(C) Thalamus
(D) Cerebrum

**Correct Answer: D**

*Explanation: Cerebrum is the largest part of the human brain.*

**25. Which lobe of the cerebrum is responsible for vision?**

(A) Occipital lobe
(B) Frontal lobe
(C) Parietal lobe
(D) Temporal lobe

**Correct Answer: A**

*Explanation: Occipital lobe is responsible for vision.*

## B. Less Important / Secondary Topics

**26. Which lobe of the cerebrum is concerned with hearing and smelling?**

(A) Temporal lobe
(B) Frontal lobe
(C) Parietal lobe
(D) Occipital lobe

**Correct Answer: A**

*Explanation: Temporal lobe is concerned with hearing and smelling.*

**27. What is the function of the corpus callosum?**

(A) Control balance

(B) Connect the two cerebral hemispheres
(C) Regulate body temperature
(D) Produce hormones

**Correct Answer: B**

*Explanation: The two hemispheres are connected by a bundle of nerve fibres called corpus callosum.*

**28. What is the function of oxytocin?**

(A) Lower blood sugar
(B) Raise blood sugar
(C) Cause uterine contractions during birth
(D) Regulate metabolism

**Correct Answer: C**

*Explanation: Cause uterine contractions during birth — this correctly answers the question.*

**29. What is the function of antidiuretic hormone (ADH)?**

(A) Lower blood sugar
(B) Raise blood sugar
(C) Regulate metabolism
(D) Cause reabsorption of water from nephrons

**Correct Answer: D**

*Explanation: ADH causes reabsorption of water from the nephrons.*

**30. What is the condition called when there is under-secretion of ADH?**

(A) Diabetes insipidus
(B) Diabetes mellitus
(C) Goitre
(D) Acromegaly

**Correct Answer: A**

*Explanation: Under-secretion of ADH results in large quantity of dilute urine, a disease called diabetes insipidus.*

**31. What is the function of thyroxin?**

(A) Lower blood calcium
(B) Regulate basic metabolism
(C) Raise blood calcium
(D) Lower blood sugar

**Correct Answer: B**

*Explanation: Regulate basic metabolism — this correctly answers the question.*

**32. What is the cause of goitre?**

(A) Excess thyroxin
(B) Excess insulin
(C) Deficiency of iodine
(D) Deficiency of calcium

**Correct Answer: C**

*Explanation: The deficiency of iodine in diet causes the disease goitre, which is the enlargement of thyroid gland.*

**33. Which hormone is secreted by the adrenal medulla?**

(A) Insulin
(B) Glucagon
(C) Thyroxin
(D) Adrenaline

**Correct Answer: D**

*Explanation: Adrenal medulla produces hormones called adrenaline and nor-adrenaline.*

**34. What is the function of adrenaline?**

(A) Prepare body for emergency

(B) Lower blood sugar
(C) Raise blood sugar
(D) Regulate metabolism

**Correct Answer: A**

*Explanation: Adrenaline is secreted to meet emergency situations e.g., fight and flight.*

**35. Which hormone is secreted by the testes?**

(A) Oestrogen
(B) Testosterone
(C) Progesterone
(D) Thyroxin

**Correct Answer: B**

*Explanation: The male hormone testosterone is secreted by the testes of males.*

**36. A patient has a condition where the myelin sheath is damaged. What is the most likely effect?**

(A) Increased speed of nerve impulse
(B) Increased neurotransmitter release
(C) Reduced speed of nerve impulse
(D) Reduced neurotransmitter release

**Correct Answer: C**

*Explanation: Reduced speed of nerve impulse — this correctly answers the question.*

**37. A person has a condition where the cerebellum is damaged. What is the most likely effect?**

(A) Loss of memory
(B) Loss of vision
(C) Loss of hearing
(D) Loss of balance and coordination

**Correct Answer: D**

*Explanation: Loss of balance and coordination — this correctly answers the question.*

**38. Which of the following would increase the speed of nerve impulse?**

(A) Myelinated axon
(B) Unmyelinated axon
(C) Short axon
(D) Thin axon

**Correct Answer: A**

*Explanation: Myelinated axon — this correctly answers the question.*

**39. A patient has a condition where the medulla oblongata is damaged. What is the most likely effect?**

(A) Loss of balance
(B) Loss of heartbeat and breathing control
(C) Loss of memory
(D) Loss of vision

**Correct Answer: B**

*Explanation: Loss of heartbeat and breathing control — this correctly answers the question.*

**40. Which of the following is the correct sequence of a reflex arc?**

(A) Receptor → Motor neuron → Interneuron → Sensory neuron → Effector
(B) Effector → Sensory neuron → Interneuron → Motor neuron → Receptor
(C) Receptor → Sensory neuron → Interneuron → Motor neuron → Effector
(D) Receptor → Interneuron → Sensory neuron → Motor neuron → Effector

**Correct Answer: C**

*Explanation: Receptor → Sensory neuron → Interneuron → Motor neuron → Effector — this correctly answers the question.*

**41. A person has a condition where the pituitary gland is not functioning properly. What is the most likely effect?**

(A) Loss of balance
(B) Loss of vision
(C) Loss of hearing
(D) Hormonal imbalances

**Correct Answer: D**

*Explanation: The pituitary gland is the master gland and controls other endocrine glands. Dysfunction would cause hormonal imbalances.*

**42. Which of the following would decrease blood sugar?**

(A) Insulin
(B) Glucagon
(C) Adrenaline
(D) Thyroxin

**Correct Answer: A**

*Explanation: Insulin — this correctly answers the question.*

**43. A patient has a condition where the thyroid gland is overactive. What is the most likely effect?**

(A) Slow metabolism
(B) Fast metabolism
(C) Low blood calcium
(D) High blood calcium

**Correct Answer: B**

*Explanation: Fast metabolism — this correctly answers the question.*

**44. Which of the following is a function of the hypothalamus?**

(A) Control balance
(B) Control heartbeat
(C) Regulate body temperature
(D) Produce insulin

**Correct Answer: C**

*Explanation: Regulate body temperature — this correctly answers the question.*

**45. A person has a condition where the adrenal medulla is not functioning properly. What is the most likely effect?**

(A) Loss of balance
(B) Loss of memory
(C) Loss of vision
(D) Reduced ability to respond to stress

**Correct Answer: D**

*Explanation: The adrenal medulla produces adrenaline and nor-adrenaline, which prepare the body for emergencies.*

**46. Which of the following is the correct order of the parts of the brain?**

(A) Forebrain → Midbrain → Hindbrain
(B) Hindbrain → Midbrain → Forebrain
(C) Midbrain → Forebrain → Hindbrain
(D) Forebrain → Hindbrain → Midbrain

**Correct Answer: A**

*Explanation: The brain is divided into forebrain, midbrain, and hindbrain.*

**47. A patient has a condition where the sympathetic nervous system is overactive. What is the most likely effect?**

(A) Decreased heart rate

(B) Increased heart rate
(C) Increased digestion
(D) Decreased blood pressure

**Correct Answer: B**

*Explanation: The sympathetic nervous system prepares the body for fight or flight, increasing heart rate and blood pressure.*

**48. Which of the following would increase the release of neurotransmitters?**

(A) Decreased calcium influx
(B) Increased potassium influx
(C) Increased calcium influx
(D) Decreased sodium influx

**Correct Answer: C**

*Explanation: Calcium influx causes synaptic vesicles to fuse with the presynaptic membrane and release neurotransmitters.*

**49. A person has a condition where the frontal lobe is damaged. What is the most likely effect?**

(A) Loss of vision
(B) Loss of hearing
(C) Loss of balance
(D) Loss of movement and speech

**Correct Answer: D**

*Explanation: Loss of movement and speech — this correctly answers the question.*

**50. Which of the following is the correct sequence of events during a nerve impulse?**

(A) Resting potential → Depolarization → Repolarization → Resting potential
(B) Depolarization → Resting potential → Repolarization → Resting potential
(C) Resting potential → Repolarization → Depolarization → Resting potential
(D) Repolarization → Depolarization → Resting potential → Resting potential

**Correct Answer: A**

*Explanation: Resting potential → Depolarization → Repolarization → Resting potential — this correctly answers the question.*