

**Biology 3201**  
**Quiz on Nervous System**

Total 33 points

Name: \_\_\_\_\_

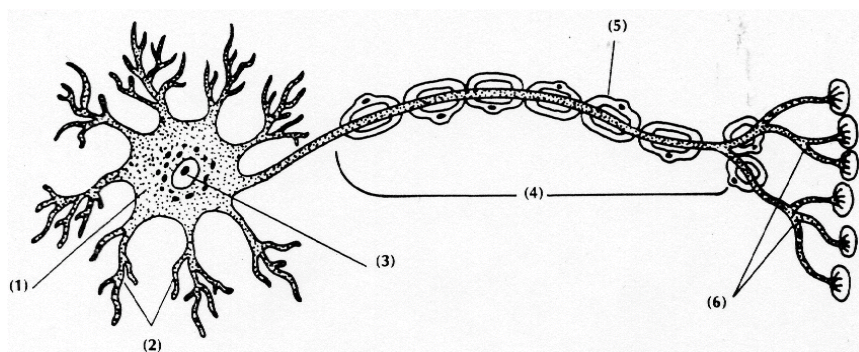
Circle the best response to the following: (33 points)

1. What do we call the long fibre that carries impulses away from the nerve cell body?
  - A. Axon
  - B. Axon terminal
  - C. Dendrite
  - D. Interneuron
  
2. Impulses are carried to the brain and spinal cord by which of the following?
  - A. Interneurons
  - B. Motor neurons only
  - C. Sensory and motor neurons
  - D. Sensory neurons only
  
3. Which of the following actions restores a neuron to its resting state?
  - A. Action potential
  - B. Depolarization
  - C. Polarization
  - D. Repolarization
  
4. What do we call the point of contact where impulses pass from one neuron to the next?
  - A. Effector
  - B. Gradient
  - C. Receptor
  - D. Synapse
  
5. When a nerve cell is depolarized, which of the following situations apply?
  - A. The inside of the cell membrane is negatively charged and the outside is negatively charged
  - B. The inside of the cell membrane is negatively charged and the outside is positively charged
  - C. The inside of the cell membrane is positively charged and the outside is negatively charged
  - D. The inside of the cell membrane is positively charged and the outside is positively charged
  
6. What do we call chemicals in the axon terminals at a synapse that are used by one neuron to signal another?
  - A. Effectors
  - B. Impulses
  - C. Neurotransmitters
  - D. Receptors
  
7. Malathion is an insecticide that inhibits secretions of the axon terminals of insect neurons. A neuron directly affected by Malathion would be unable to do which of the following?
  - A. Conduct impulses toward the axon
  - B. Conduct impulses towards the cell body
  - C. Detect stimuli at its dendrites
  - D. Transmit information to the next neuron
  
8. Which is the first structure stimulated in a reflex arc (response) ?
  - A. Interneuron
  - B. Motor neuron
  - C. Sensory neuron
  - D. Spinal cord

9. Acetylcholine is initially detected by which part of the neuron?
- Axon terminal
  - Dendrite
  - Mitochondrion
  - Nucleus
10. In humans which of the following structural units transmits electrochemical impulses?
- Alveolus
  - Nephron
  - Neuron
  - Sweat gland
11. Which of the following helps the body deal with emergencies?
- Parasympathetic nervous system
  - Peripheral nervous system
  - Somatic nervous system
  - Sympathetic nervous system
12. Which nervous system is responsible for voluntary body movement?
- Parasympathetic nervous system
  - Peripheral nervous system
  - Somatic nervous system
  - Sympathetic nervous system
13. The nucleus of the nerve cell is contained in which part?
- Axon
  - Axon terminal
  - Cell body
  - Dendrite
14. What do interneurons connect?
- Motor neurons together
  - Nerve cell bodies together
  - Sensory and motor neurons
  - Sensory neurons together
15. The flow of electrical charges along the cell membrane of a neuron is due to changes on either side of the membrane with respect to which of the following?
- Both sodium and potassium ions
  - Neither sodium nor potassium ions
  - Potassium ions only
  - Sodium ions only
16. When does the nerve cell become depolarized?
- When both the sodium and potassium gates open
  - When the potassium gates open
  - When the sodium gates close
  - When the sodium gates open
17. What is the difference between the impulse in an unmyelinated axon and the impulse in a myelinated axon?
- The myelinated axon impulse flows continuously
  - The myelinated axon impulse jumps from node to node
  - The myelinated axon impulse moves half as fast
  - The myelinated axon impulse moves twice as fast

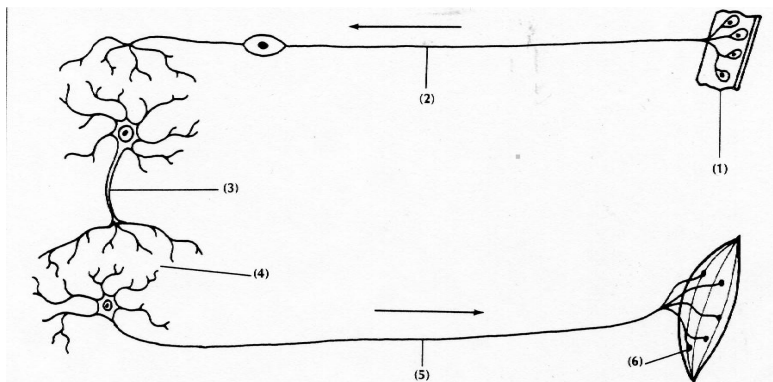
18. The surface of the brain is **not** protected by which of the following?
- Bone
  - Cerebrospinal fluid
  - Meninges
  - Pain receptors
19. How does a nerve impulse flow?
- From axon directly to dendrite
  - From axon to the cell body
  - From dendrite directly to axon
  - From dendrite to the cell body
20. What are you using every time you move your fingers?
- Motor nerves
  - Reflexes
  - The autonomic nervous system
  - The parasympathetic nervous system
21. Which of the following is **NOT** a description of the thalamus?
- It is a switching station for sensory input
  - It is composed of grey matter
  - It is found between the brainstem and the cerebrum
  - It is immediately below the hypothalamus
22. The areas of the brain involved in hearing and vision are located in which of the following areas?
- Medulla
  - Midbrain
  - Pons
  - Thalamus
23. A person with a severely damaged cerebellum would suffer from which of the following?
- A lack of coordination
  - A low heart rate
  - An inability to learn
  - High blood pressure
24. A severe injury to which of the following structures would most likely be fatal?
- The cerebellum
  - The cerebrum
  - The hypothalamus
  - The medulla oblongata
25. Which part of some neurons can conduct minor repairs to the axon?
- Cell body
  - Dendrites
  - Nodes of Ranvier
  - Schwann cells

Refer to the diagram below to answer the following three questions



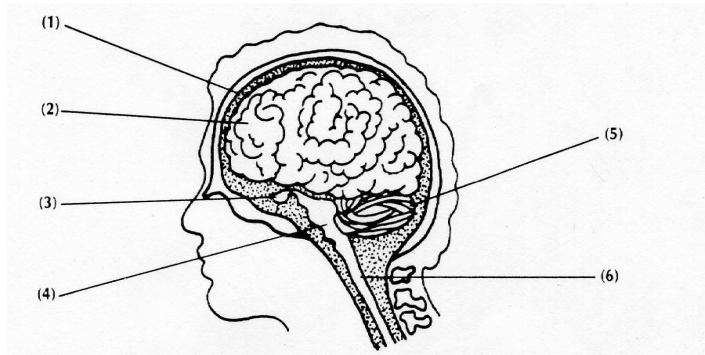
26. From where would neurotransmitters such as noradrenaline be released ?
- 1
  - 2
  - 4
  - 6
27. Which of the following most accurately describes the path of an impulse?
- 1,2,4,6
  - 2,1,4,6
  - 3,4,5,6
  - 4,5,6
28. What do the structures labelled 5 produce?
- Myelin
  - Neurotransmitters
  - Potassium ions
  - Sodium ions

Use the diagram below to answer the following two questions:



29. Given the above diagram of a simple reflex arc, what structure is labelled 3?
- An interneuron in the brain
  - An interneuron in the spinal cord
  - A motor neuron
  - A sensory neuron
30. Another name for the structure labelled 1 is which of the following terms?
- Effector
  - Interneuron
  - Receptor
  - Spinal cord

Use the following diagram to answer the next three questions:



31. Which label represents the part of the central nervous system responsible for thinking, intelligence and memory?
- A. 1
  - B. 2
  - C. 4
  - D. 5
  - E. 6
32. Where would the control of heart rate originate?
- A. 1
  - B. 2
  - C. 4
  - D. 5
  - E. 6
33. Which label controls reflex actions like pulling your hand away from a hot stove?
- A. 1
  - B. 2
  - C. 4
  - D. 5
  - E. 6