**Nervous System Test**

True or False:

1. The primary function of the nervous system is movement F
2. Mutlipolar neurons are the most common T
3. Cranial nerve VII is the facial nerve T
4. Neurotransmitters are solely excitatory because they stimulate a neuron F
5. Memory is found primarily in the frontal lobe T
6. Neurons regenerate readily F
7. Sensory neurons are found in the brain F
8. Action potentials are an electrochemical event T
9. Once the membrane potential reaches -70 mV, the action potential will definitely fire F
10. A concussion is a bruise to the brain T

Multiple Choice:

1. The term central nervous system refers to:
   1. Autonomic and peripheral nervous systems
   2. Brain, spinal cord, and peripheral nerves
   3. Brain and cranial nerves
   4. **Brain and spinal cord**
2. Which of the following is not a structural feature of a neuron?
   1. **Synaptic cleft**
   2. Cell body
   3. Dendrites
   4. Axon
3. The part of the neuron that usually receives stimuli is called a(n):
   1. Axon
   2. **Dendrite**
   3. Schwann cell
   4. Satellite cell
4. A cluster of cell bodies forming a tumor-like structure is known as:
   1. Nuclei
   2. Nerves
   3. **Ganglia**
   4. Neuroglia
5. Myelin is defined as
   1. An outer membrane on a neuroglial cell
   2. A mass of white lipid material that surrounds the cell body of a neuron
   3. **A mass of white lipid material that insulates the axon of a neuron**
   4. A mass of white lipid material that surrounds the dendrites of a neuron
6. A myelinated nerve fiber is characterized as being \_\_\_\_\_\_\_\_\_\_\_\_\_\_, wheras an unmyelinated neuron is characterized as being \_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Unique to the spinal cord; unique to the brain
   2. Unique to the brain; unique to the spinal cord
   3. **Made of white matter; made of grey matter**
   4. Made of grey matter; made of white matter
7. Action potentials are fastest in neurons that are:
   1. **Myelinated**
   2. Unmyelinated
   3. Sensory
   4. Motor
8. Which of the following is the correct sequence of events that follow a stimulus?
   * 1. The membrane becomes depolarized
     2. Sodium channels open and diffuse into the neuron
     3. Membrane becomes repolarized
     4. Potassium channels open and potassium diffuse out of the neuron
9. iii, ii, iv, i
10. **ii, i, iv, iii**
11. ii, I, iii, iv
12. i, ii, iii, iv
13. Saltatory conduction:
    1. Occurs only if the myelin sheath is continuous
    2. Occurs only if Nodes of Ranvier are lacking
    3. Occurs only when serotonin is the neurotransmitter
    4. **Is faster than conduction of an unmyelinated fiber**
14. The point at which an impulse from one nerve cell is communicated to another nerve cell is the:
    1. Cell body
    2. **Synapse**
    3. Receptor
    4. Effector
15. The substance released at axonal terminals to stimulate a nervous impulse is:
    1. Ions
    2. Sodium potassium pump
    3. **Neurotransmitter**
    4. Neuroglia
16. What is the function of calcium in the nervous system?
    1. Enhances memory
    2. Increases the durability of the meninges
    3. **Stimulates release of neurotransmitters**
    4. Makes the cranium stronger
17. Which of the following is the correct sequence of a reflex arc?
    1. Effector, sensory neuron, integration center, motor neuron, receptor
    2. Receptor, motor neuron, integration center, sensory neuron, effector
    3. Effector, motor neuron, sensory neuron, integration center, receptor
    4. **Receptor, sensory neuron, integration center, motor neuron, effector**
18. Muscles and glands are:
    1. Receptors
    2. **Effectors**
    3. Myelinated
    4. Part of the CNS
19. Three major parts of the brain stem are:
    1. Cerebrum, cerebellum, diencephalon
    2. Thalamus, hypothalamus, epithalamus,
    3. Dura mater, arachnoid mater, pia mater
    4. **Midbrain, pons, medulla oblongata**
20. A shallow groove on the surface of the cortex is called a:
    1. Fissure
    2. Gyrus
    3. **Sulcus**
    4. Furrow
21. Elevated ridges on the surface of the cerebral hemisphere is the:
    1. Ganglia
    2. **Gyri**
    3. Sulci
    4. Fissures
22. The central sulcus separates which lobes:
    1. Parietal lobe from occipital lobe
    2. **Frontal lobe from parietal lobe**
    3. Frontal lobe from temporal lobe
    4. Temporal lobe from occipital lobe
23. Lobe that contains the motor cortex
    1. Parietal
    2. Occipital
    3. **Frontal**
    4. Temporal
24. If the area of the cerebral hemisphere corresponding to Broca’s area is damaged, what is the result?
    1. Memory is lost
    2. Eyesight is lost
    3. Motor control is impaired
    4. **Motor control of speech is lost**
25. The vital centers for the control of heart rate, respiration, and blood pressures are located in the:
    1. Pons
    2. **Medulla oblongata**
    3. Midbrain
    4. Cerebrum
26. The hypothalamus:
    1. **Is the thermostat of the body because it regulates temperature**
    2. Is the important auditory relay center
    3. Mediates sensations
    4. Is central to the peripheral nervous system
27. The thalamus is responsible for:
    1. Controlling sleep-wake cycle
    2. **Relaying messages in the CNS**
    3. Reading and comprehension
    4. Motor control
28. Which of the following is the correct sequence from outermost to innermost meninges?
    1. Pia, dura, arachnoid
    2. Arachnoid, pia, dura
    3. **Dura, arachnoid, pia**
    4. Dura, pia, arachnoid
29. An inflammation of the pia mater as a result of a virus or bacterial infection is known as:
    1. Alzheimer’s
    2. Hydrocephalus
    3. **Meningitis**
    4. Bells Palsy
30. The blood brain barrier is effective against:
    1. Water
    2. Nutrients, like glucose
    3. Alcohol,
    4. **Metabolic wastes (urea)**
31. Which of the following is not a function of the supporting cells in the nervous system:
    1. Produce myelin
    2. **Secrete cerebrospinal fluid**
    3. Protection/immune defense
    4. Support the blood brain barrier
32. An interneuron can be found in:
    1. The PNS
    2. The pineal gland
    3. **The spinal cord**
    4. The brain stem
33. The functions of the vestibulocochlear nerves concern:
    1. **Vision and hearing**
    2. Smell and taste
    3. Hearing and balance
    4. Digestive activity
34. Cranial nerve IX corresponds to:
    1. **Glossopharyngeal**
    2. Vagus
    3. Trochlear
    4. Optic
35. An injury to cranial nerve III would result in:
    1. Difficulty hearing
    2. Difficulty tasting
    3. **Difficulty moving the eye**
    4. Difficulty feeling sensation on the face
36. The function of the accessory cranial nerve (XI) is:
    1. **Shoulder movement**
    2. Taste
    3. Vision
    4. Hearing
37. Most specifically, the sympathetic and parasympathetic nervous systems are subdivisions of the:
    1. CNS
    2. PNS
    3. Somatic nervous system
    4. **Autonomic nervous system**
38. Preparing for a “fight or flight” response is the role of the:
    1. **Sympathetic nervous system**
    2. Parasympathetic nervous system
    3. Sensory cortex
    4. Motor cortex
39. Which of the following is not a result of parasympathetic stimulation:
    1. Salivation
    2. Decreased heart rate
    3. **Sweating**
    4. Increased rate of digestion
40. Reflexes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, while reactions are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    1. Voluntary, involuntary
    2. **Involuntary, voluntary**
    3. Motor, sensory
    4. Sensory, motor
41. If I damaged the sensory cortex of my right brain hemisphere, which of the following would be difficult for me?
    1. Moving my right arm
    2. Moving my left arm
    3. **Feeling sensation on my left arm**
    4. Feeling sensation on my right arm
42. An injury to my epithalamus would result in:
    1. Death
    2. **Altered sleep/wake cycle**
    3. Inability to move
    4. Extreme hunger/anger
43. The following are the major regions of the brain:
    1. Motor, sensory, peripheral, central
    2. **Diencephalon, cerebellum, cerebrum, brain stem**
    3. Frontal, thalamus, occipital, grey matter
    4. Optic, oculomotor, olfactory, and vagus

Matching- may not use all the answer choices

1. Visual Area D
2. Auditory Area C
3. Speech recognition region F
4. Motor speech area E
5. Divides brain into left and right hemispheres G
6. Balance and coordination A
   1. Cerebellum
   2. Parietal lobe
   3. Temporal lobe
   4. Occipital lobe
   5. Broca’s Area
   6. Wernicke’s Area
   7. Corpus Callosum
   8. Cerebral cortex
7. Hyperpolarization A
8. Rest D
9. Depolarization C
10. Repolarization B
    1. Na+ open/K+ open
    2. Na+ closed/K+ open
    3. Na+ open/ K+ closed
    4. Na+ closed/ K+ closed
11. Mama says:
    1. **Alligators are ornery because they got all them teeth, but no toothbrush**
    2. **Life is like a box of chocolates**
    3. **Knock you out**
    4. **Get a job**

Short Answer:

1. Write about the differences between reflexes and reactions. Provide examples of each and describe the series of neurological events that lead to each. What type of neurons are involved?
2. Draw a graph displaying the change in membrane potential during an action potential/nerve impulse. Label the following: stimulus, rest, depolarization, repolarization, action potential, hyperpolarization. Finally, describe why another action potential cannot occur during the hyperpolarization stage.
3. Describe the behavior/tendencies of an individual with a severed (cut) corpus callosum. Mention what occurs when they see an image/word in their right vs. their left eye. What does each side of the brain specialize in?