

## *Divisions of the Nervous System and the Brain*

### **L.O. N – 1: Functions of the Central and Peripheral Nervous Systems**

- \_\_\_ 1. What two structures does the Central system include?
- \_\_\_ 2. List three protective measures that protect the brain and spinal cord.
- \_\_\_ 3. What makes up the gray matter of the brain and in the spinal cord?
- \_\_\_ 4. What makes up the white matter?
- \_\_\_ 5. List three components of the spinal cord.
- \_\_\_ 6. Why is the spinal cord said to be like a divided highway?
- \_\_\_ 7. Define ganglia (singular = ganglion)
- \_\_\_ 8. The peripheral nervous system includes all nerves that arise from which two places?
- \_\_\_ 9. Nerves that come directly from the brain are called \_\_\_\_\_ nerves.
- \_\_\_ 10. All cranial nerves serve the face and the neck except one called the ?
- \_\_\_ 11. What does the vagus nerve serve?
- \_\_\_ 12. What are the nerves called that arise from the spinal cord?
- \_\_\_ 13. What kind of neurons make up the dorsal portion of the spinal nerves?
- \_\_\_ 14. What makes up the dorsal root ganglion?
- \_\_\_ 15. What kind of neurons make up the ventral portion of the spinal nerves?
- \_\_\_ 16. Name two subsystems or divisions that make up the peripheral nervous system.
- \_\_\_ 17. The system that serves the musculoskeletal system is the \_\_\_\_\_ system?
- \_\_\_ 18. What system serves the internal organs?
- \_\_\_ 19. What system serves the external sense organs?
- \_\_\_ 20. What is the main function of the somatic nervous system?
- \_\_\_ 21. What kind of neurons are involved with the autonomic nervous system?
- \_\_\_ 22. What kind of neurons are involved with the somatic nervous system?
- \_\_\_ 23. Name the two divisions that make up the autonomic nervous system.

### **L.O. N – 2 Sympathetic vs Parasympathetic Nervous System**

- \_\_\_ 1. List three things that both the sympathetic and parasympathetic systems have in common.
- \_\_\_ 2. Where is the first cell body located in each system?
- \_\_\_ 3. What is the name for the axon closest to the spinal cord?
- \_\_\_ 4. What is the name for the axon further away from the spinal cord?
- \_\_\_ 5. From where do the nerves of the sympathetic system arise?
- \_\_\_ 6. How do the lengths of the pre and post ganglionic axon differ in the sympathetic system?
- \_\_\_ 7. Where is the ganglion located in the sympathetic system?
- \_\_\_ 8. When is the sympathetic system important?
- \_\_\_ 9. Define what is meant by “flight or flight reactions”.
- \_\_\_ 10. Give at least three examples of the way the sympathetic system can affect your body.

- \_\_\_ 11. What is the transmitter substance used in the sympathetic system?
- \_\_\_ 12. From where do the nerves of the parasympathetic system arise?
- \_\_\_ 13. Where is the ganglion located in the parasympathetic system?
- \_\_\_ 14. How do the preganglionic axon and postganglionic axon differ in length?
- \_\_\_ 15. What is the function of the parasympathetic system?
- \_\_\_ 16. Give at least three examples of the way in which the parasympathetic system can affect your body.
- \_\_\_ 17. What is the neurotransmitter substance used in the parasympathetic system?

### **L.O. N – 3 Adrenalin**

- \_\_\_ 1. What is the source gland for adrenalin?
- \_\_\_ 2. Where is the adrenal glands located in the body?
- \_\_\_ 3. What hormone stimulates the adrenal glands to release adrenalin?
- \_\_\_ 4. List the 6 things adrenalin does to your body for the “fight or flight” response.
- \_\_\_ 5. All 6 things increase stimulation except for one that decreases stimulation. Name it and why?

### **L.O. N – 4 Part of the Brain**

- \_\_\_ 1. Name the three major regions of the brain.
- \_\_\_ 2. What is the function of the midbrain?
- \_\_\_ 3. Name two structures that make up the hindbrain.
- \_\_\_ 4. What part of the brain is a transition pathway between the brain and the spinal cord?
- \_\_\_ 5. List at least 8 functions that the medulla oblongata is responsible for.
- \_\_\_ 6. What structure in the brain resembles a butterfly?
- \_\_\_ 7. Give 3 responsibilities of the cerebellum.
- \_\_\_ 8. How large is the cerebellum compared to the other parts of the brain?
- \_\_\_ 9. Name the three parts of the brain that make up the forebrain.
- \_\_\_ 10. What is the major role of the hypothalamus?
- \_\_\_ 11. List six human functions that are controlled by the hypothalamus?
- \_\_\_ 12. What part of the receives nearly all of the sensory impulses?
- \_\_\_ 13. What happens to the sensory information after it has been filtered by the thalamus?
- \_\_\_ 14. What is the largest part of the human brain?
- \_\_\_ 15. What function of this part of the brain makes humans distinctive in the animal world?
- \_\_\_ 16. The brain is divided into a left and right part which are called what?
- \_\_\_ 17. What allows the two hemispheres to share information?
- \_\_\_ 18. Each hemisphere contains four \_\_\_\_\_?
- \_\_\_ 19. Given a diagram of a human brain, be able to label different parts as well as the lobes of the cerebrum.
- \_\_\_ 20. What is the outer surface of the cerebrum called?
- \_\_\_ 21. Name four lobes of the cerebrum and give their approximate location.
- \_\_\_ 22. Give two functions of the frontal lobe.

- \_\_\_ 23. What sensation are interpreted by the parietal lobes?
- \_\_\_ 24. Besides interpreting sensation, what is another function of the parietal lobes?
- \_\_\_ 25. What sensation are interpreted by the temporal lobes?
- \_\_\_ 26. Besides interpreting sensations, what is another function of the temporal lobes?
- \_\_\_ 27. What sense does the occipital lobes control?
- \_\_\_ 28. The occipital lobes are also responsible for combining or integrating what types of experiences?

### **L.O. N – 5 Neuroendocrine Control Center**

- \_\_\_ 1. Why is the hypothalamus said to be linked between the nervous and the endocrine systems?
- \_\_\_ 2. What part of the brain does the hypothalamus have direct control over?
- \_\_\_ 3. The pituitary gland has \_\_\_\_\_ lobes?
- \_\_\_ 4. These lobes are called the \_\_\_\_\_ lobe and the \_\_\_\_\_ lobe.
- \_\_\_ 5. The anterior lobe is controlled by the hypothalamus by hormonal control. Explain?
- \_\_\_ 6. The hypothalamus releases a \_\_\_\_\_ to stimulate the pituitary gland to release its hormones.
- \_\_\_ 7. How many hormones does the anterior pituitary gland have?
- \_\_\_ 8. The posterior pituitary gland is controlled by what part of the brain?
- \_\_\_ 9. The posterior pituitary gland is controlled by neural activity. Explain?
- \_\_\_ 10. How many hormones does the posterior pituitary gland have?