

## Nervous System Problem Set

- 1) What are the 3 main functions of the nervous system?
- 2) What are the 2 major divisions of the nervous system?
- 3) Describe the anatomy of the Central Nervous System (CNS).
- 4) Describe the anatomy of the Peripheral Nervous System (PNS).
- 5) What are the 2 main divisions of the PNS?
- 6) What are the 2 systems within the motor division of the PNS?
- 7) What are the 2 divisions of the Autonomic Nervous System?
- 8) What is the difference between the Sympathetic and Parasympathetic divisions?
- 9) Draw a neuron, label the following parts and give their functions: Cell body, nucleus, axon, synaptic knob, myelin, schwann cell, nodes of Ranvier, impulse, dendrites,
- 10) How fast does an impulse travel in a myelinated axon? In an unmyelinated axon?
- 11) How long are axons?
- 12) What are neuroglial cells?
- 13) Name 3 structurally different neurons.
- 14) What are the 3 types of functionally different neurons?
- 15) What is an action potential?
- 16) Why are electrolytes important in your diet?
- 17) Describe the major events of an action potential.
- 18) Draw an axon when it is polarized (resting) and when it is depolarized (firing). Label K<sup>+</sup>, Na<sup>+</sup>
- 19) Are action potentials "all-or-none" responses?
- 20) Do neurons touch each other?
- 21) What happens when the action potential reaches the synapse?
- 22) How many types of neurotransmitters are found in the body? List 7 and give their location and major action.
- 23) How do drugs affect neurotransmitters?
- 24) What neurotransmitter triggers addiction in humans?
- 25) Draw and label the cross section of the spinal cord. What is the function of afferent neurons and efferent neurons?
- 26) Explain what happens in a reflex arc.
- 27) How do pain killers work?
- 28) Are there people born without the ability to feel pain?
- 29) What is a neurotoxin?
- 30) List the 12 cranial nerves. How can you remember them?
- 31) How much does the brain weigh?
- 32) What are the meninges of the brain? What is meningitis?
- 33) What fluid acts as a shock absorber and cushions the brain and spinal cord?
- 34) What are the ventricles of the brain? What is hydrocephalus?
- 35) Draw, label and give the function of the four lobes of the brain.
- 36) Why do many teenagers make stupid mistakes?
- 37) What are the main characteristics of Alzheimer's?
- 38) What is the function of the following parts of the brain:
- 39) What is a sulcus? What is a gyrus?

- 40) What do Michael J. Fox and Muhammad Ali have in common?
- 41) What are the primary motor cortex and the primary somatosensory cortex? What structure separates them?
- 42) What is hemisphere dominance?
- 43) What is epilepsy? What are some cures?
- 44) What is autism? What is an Autistic Savant?
- 45) What is Capgras syndrome?
- 46) Do some people taste colors or see smells?
- 47) What does "brain plasticity" mean?
- 48) What is phantom limb?
- 49) What is a conditioned stimulus?
- 50) What is an EEG?
- 51) Why do we need to sleep? What are the five stages of sleep?
- 52) How long is a complete sleep cycle in the average human? How long do we need to sleep?
- 53) Why do we dream?
- 54) Which two mental disorders does Hollywood always get mixed up?
- 55) What is a cerebral aneurism? Lack of oxygen to a tissue is called? Death of that tissue from the lack of oxygen is called?
- 56) Identify each structure.

