Name _____
Human Biology Lab Manual Lab Report
Laboratory Exercise 6: Nervous System

CENTRAL NERVOUS SYSTEM

Activity 1: Match the Functions of the Cerebral Lobes:

Match the cerebral lobe with its function by writing the letter on the line provided.

1. _____
2. _____
3. _____
4. _____
5. _____

Activity 2: Match the Functions of the Structures of the Diencephalon:

Match the structure of the diencephalon with its function by writing the letter on the line provided.

1. _____
2. _____
3. _____
4. _____

Activity 3: Match the Functions of the Structures of the Brain Stem:

Match the structure of the brain stem with its function by writing the letter on the line provided.

1. _____
2. _____
3. _____
4. _____

Activity 4: Compare the Sheep Brain to the Human Brain:

1. Are there any proportional differences in the size of these brain regions: cerebrum, cerebellum, or brain stem? If so, what are they?

   _____

   _____

2. Are there any positional differences of these brain regions: cerebrum, cerebellum, or brain stem? If so, what are they?

   _____

   _____

3. What are the differences in the number and depth of the gyri (folds) and sulci (grooves) of the cerebrum?

_____

4. What is the difference in the size of the olfactory bulbs between sheep and human brains? Why would this size difference occur?

_____

_____

PERIPHERAL NERVOUS SYSTEM

Activity 5: Performing a Spinal Reflex

Record your observations of the knee-jerk reflex.

	Subject 1	
	Right Leg	**Left Leg**
Does the leg **flex** (move inward) or **extend** (move outward)?		
	Subject 2	
	Right Leg	**Left Leg**

Activity 6: Measuring Reaction Time

Why would you design the experiment with alternating the types of tests rather than just doing all ten of one condition followed by all ten of the other condition?

_____

_____

Describe the distraction: _____

Table 1: Recorded data for Reaction Time Experiment (msec)

Trial Number	Undistracted Reaction Time	Distracted Reaction Time
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Total		
Average (Total/10)		

Describe the distraction: _____

Table 2: Recorded data for Reaction Time Experiment (msec)

Trial Number	Undistracted Reaction Time	Distracted Reaction Time
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Total		
Average (Total/10)		

The reaction times of most of the ten trials should be similar, but perhaps the first few (or one at random) may be relatively different from the others. Suggest some reasons for this variability.

_____

_____

What real-life experiences where reaction time is critical could be affected by distractions? Explain why you think this is the case and why distracted reaction times differ from undistracted reaction times.

_____

_____

_____

Activity 7: Lab Review

1. What two structures make up the central nervous system? _____
2. What neuronal structure extends from the cell body and transmits electrical signals to other cells? _____
3. What type of neuron transmits information from sensory receptors to the central nervous system? _____
4. Which brain region is divided into right and left hemispheres? _____
5. Which cerebral lobe controls cognitive functions? _____
6. Which structure of the diencephalon regulates homeostasis? _____
7. Which structure of the brain stem is the control center for breathing, heart rate, and blood pressure? _____
8. What structure protects the spinal cord? _____
9. Which response is an involuntary response to a stimulus: reflex or reaction? _____