Title

Your Name

Course

Date

**Case Study 1**

Please note that your project should be written in essay format. You should begin by including a general introductory sentence(s) restating the background of the case study.  You want to write your essay as if the reader does not know the assignment instructions and is understandable to a new reader. Your answers for each case study should be written in 2-3 paragraphs.

Scoring Guide Expectations:

1. Identifies receptor neuron responsible for sending information from her finger to her peripheral nervous system. (3 pts)
2. Determines if the receptor neuron is an afferent or efferent neuron. (3 pts)
3. Explains where the information from the receptor neuron is sent and how it results in Amy moving her finger away from the stove. (6 pts)
4. Identifies how many neurons are typically involved in this response. (3 pts) Lists the names of these neurons. (3 pts)
5. Describes why evolutionarily the human body has this system in place. (4 pts)
6. Describes what might happen if we did not have this response. (3 pts)

**Helpful Guidance for Case Study 1:**

* **You will want to read Chapter 7 of the textbook.**
* **The Unit 5 and 6 seminars will also be very helpful for this case study. The archived seminars are available to you as well as the handouts in Doc Sharing.**
* **In particular, for this set of questions, please read over pages 194-195.**

**Case Study 2**

You should begin by including a general introductory sentence(s) restating the background of the case study.

Scoring Guide Expectations:

1. Describes Early Onset Parkinson’s disease. (4 pts)
2. Identifies the specific cell type affected in Parkinson’s disease. (3 pts)
3. Defines dopamine. (2 pts)
4. Explains the effect that dopamine has on the body. ( 4 pts)
5. Explains the structure of a synapse (4 pts)
6. Explains why Glen’s neurologist would prescribe him a dopamine agonist. (4 pts)
7. Describe how you would advise Glen's children on genetic testing. (4 pts)

**Helpful Guidance for Case Study 2:**

* **You will want to read Chapter 7 of the textbook.**
* **The Unit 6 seminar will also be very helpful for this case study. The archived seminars are available to you as well as the handouts in Doc Sharing.**
* **For question 4, see page 181 of the textbook.**
* **For question 5, there are 3 parts to a synapse. Also, see page 180 of the textbook.**
* **For question 7, you want to discuss some of the ethical and emotional issues related to genetic testing for early detection of a debilitating disease? See page 188 of the textbook where a similar situation is discussed relating to Alzheimer’s disease. The issues are similar for Parkinson’s disease.**

**Case Study 3**

You should begin by including a general introductory sentence(s) restating the background of the case study.

Scoring Guide Expectations:

1. Describes multiple sclerosis (MS). (5 pts)
2. Identifies whether MS is a disease of the central or peripheral nervous system. (3 pts)
3. Identifies the main cell structure affected in MS. (4 pts)
4. Explains how the action potential of a neuron is affected in MS. (7 pts)
5. Describes the various scientific hypotheses for the causes of MS. (6 pts)

**Helpful Guidance for Case Study 3:**

* **You will want to read Chapter 7 of the textbook.**
* **For question 3, please note that the answer is a cell structure. You should name the structure and the cell that develops the structure.**
* **For question 4, read pages 178 and 179 of the textbook. This should be a detailed explanation.**
* **Fore question 5, you should provide a detailed discussion on the various hypotheses for the causes of MS.**

**References:**

Ireland, K. (2013). Visualizing human biology (4th ed.). Hoboken, NJ: Wiley & Sons.

You should have additional references as well as the textbook.