**Magnetic Resonance Imaging , Post–Quiz Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**These questions are intended to understand what previous exposure you’ve had to material we are going to be covering in class. You aren’t graded for right or wrong answers, so please just answer honestly. If you don’t know an answer, feel free to write, “I don’t know”.**

1. **Describe (using a picture) how current is used to produce a magnetic field for an MRI device.**

Confident neutral not confident

**I am confident in my answer.** 5 4 3 2 1

1. **What is the primary element in the human body that is useful for MRI imaging? What is it about the body and this element that makes it so useful?**

Confident neutral not confident

**I am confident in my answer.** 5 4 3 2 1

1. **Compare the magnetic field used in MRI to the earth’s magnetic field (qualitatively or quantitatively). What is the rough order of magnitude of the magnetic field utilized in MRIs?**

Confident neutral not confident

**I am confident in my answer.** 5 4 3 2 1

1. **Consider the following three arrangements. For each arrangement draw arrows to indicate the direction of the magnetic field at the points indicated:**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| A single loop carrying current in the direction shown. | A single electron (the little e) traveling into the page as the arrow shows. | A single electron (the little e) traveling into the page as the arrow shows, AND a stationary particle with charge 5 times larger than an election (the big e). (ignore the possibility that the two charges move one another) |

Space for written information if you think you need it:

Confident neutral not confident

**I am confident in my answer.** 5 4 3 2 1

1. **How is the Larmor frequency related to the element from problem 2?   
   The frequency corresponds to which part of the spectrum of electromagnetic radiation?  
   How does one increase the frequency?**

Confident neutral not confident

**I am confident in my answer.** 5 4 3 2 1

1. **How is a gradient magnetic field produced in the MRI device? How does this affect the Larmor frequency? What is the purpose of gradient fields in the MRI device?**

Confident neutral not confident

**I am confident in my answer.** 5 4 3 2 1

**Feedback**

1. **After completing this activity do you feel that you better understand the topic?**

**(5- Much better understanding to 1- No additional understanding)**

 5

 4

 3

 2

 1

1. **How would you rate this activity with other physics or biology activities you have done?**

**(5- Very interesting to 1- Not at all interesting)**

 5

 4

 3

 2

 1

1. **Do you have any additional comments or suggestions about this activity?**