**LASER PhET Activity, Pre–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. **Define stimulated emission and describe a stimulated emission event. Name two things that are different between stimulated and spontaneous emission, and make lasing possible.**

Confident neutral not confident

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

1. **Name two parameters which can increase the likelihood of stimulated emission. Explain why these two parameters make stimulated emission more likely.**

Confident neutral not confident

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

1. **Why is the light emitted by all lasers monochromatic (one color)? What atomic property determines the wavelength?**

Confident neutral not confident

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

1. **Define population inversion and explain how it depends on lifetime prior to spontaneous emission and cavity reflectivity. What is the importance of population inversion to lasing?**

Confident neutral not confident

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

1. **Describe how energy levels higher than the levels of the lasing transition be used effectively for stimulated emission.**

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 how lasers work?**

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

 5

 4

 3

 2

 1

1. **How would you rate this activity with other physics, chemistry, or biology 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?**