**CT-scan, 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. **Identify the properties of tissues that affect the shading of an x-ray image, and describe how the shading relates to attenuation of x-rays.  
    What mathematical function models the rate of attenuation?**

Confident neutral not confident

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

1. **List advantages of using CT (enabled by back-projection) over regular X-ray imaging. Back up your answer by describing types of injuries or regions of the body where CT scans are either inappropriate or more appropriate.**

Confident neutral not confident

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

1. **Compare a CT radiation dose to normal planar x-rays and explain why there is a difference.**

Confident neutral not confident

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

1. **Explain why x-rays are less attenuated by tissue as compared to visible light and explain the biological dangers, and technological challenges to producing x-ray radiation.**

Confident neutral not confident

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

1. **Explain the issues radiologists must consider while manipulating image quality and the duration of the scan.**

Confident neutral not confident

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

1. **An x-ray source and detector are used to probe the contents of a box, which has an object inside it. The source and detector are rotated around the enclosure so that there are two distinct x-ray forward projections of the box. In the figure below, draw the back projected data and a circle to represent the object.**

X-RAY SOURCE (Position 1)

X-RAY SOURCE (Position 2)

X-RAY DETECTOR (Position 2)

X-RAY DETECTOR (Position 1)

Confident neutral not confident

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