#3 NaI Lab Laboratory Questions

1. Draw a schematic diagram of the NaI detector (including crystal, photocathode, dynodes, anode) and describe each step in the mechanisms for converting a radiation interaction into an electronic signal pulse.

2. What are the six ideal properties of scintillation materials?

3. Name the main advantages and disadvantages of inorganic scintillators.

4. Name the main advantages and disadvantages of organic scintillators.

5. Compare a NaI with a high-purity germanium (HPGe) spectrometer with respect to efficiency, resolution, and cost.

6. Describe or illustrate the difference between paralyzable and non-paralzyable systems in regard to collected pulses.

7. Given the following data, calculate the dead time.

Sample	Counts 1 (cpm)	Counts 2 (cpm)	Counts 1,2 (cpm)	Counts Bkg (cpm)
	663215	720402	1286492	2967