1. The peak power of a 6ft. diameter antenna is 10 watts and its duty cycle is 0.250. The wave length is 0.03m/cycle. Find the power density in mw/cm2 at 50 meters from the antenna.
2. The activity of an isotope was determined to be 4000mci on Monday at 10.00 am on Tuesday at the same time its activity was found to be 3200mci. Find this isotope’s half-life.

* For credit you must use the appropriate equation.

1. Given the energy range of a radiation source to be 0.5 ev.

Calculate the same energy range in joules.

* Don’t use the correction factor or 1v= 1.6Χ10-10joules.

1. A wall was constructed in the middle ofthe “near field” region of Non-ionizing  redaction source that has a peak power of 50 meters. The diameter of its transmitting antenna is 4 meters. Determine the attenuation factor for this wall.

* Don’t make any assumption.

1. A 15mw energy laser has a beam exit diameter of 2cm and beam divergence of 0.0002radians.
2. Calculate the power density of the beam at 100meters away from the source.
3. Assuming that this beam has a wave length of 312nm, and the viewing time is 10minutes/day, determine if the TLV is exceeded.

After 7 hours of its preparation determine the portion left of a radioactive isotope, if its half-life is known to be 5 hours.