**Numerical problems on Unit 5 (PHY125)**

1. Find the wavelength and frequency of a 100 MeV photon.
2. Calculate the wavelength associated with an electron accelerated to a potential difference of 1.25 kV.
3. A proton in a one-dimensional box has an energy of 540 keV in its first excited state. How wide is the box?
4. A particle limited to x axis has the wave function Y = ax between x=0. And x= 1, Y = 0 elsewhere. Find the probability that the particle can be found between x= 0.45 and x= 0.55.
5. Find the de Broglie wavelength of (a) a 26 gm golf ball with a velocity of 30 m/s and (b) an electron with a velocity of 105 m/s.