1. An electron with 5Mev energy annihilates with a rest position and generates 2 photons. One photon moves along the direction of the incident electron. Calculate the energy of the 2 photons.

2. How many positrons can a 200MeV photon generate?

3. In attenuating light, how thick of aluminum (μ_{AL}=0.044 mm^{-1}) is as effective as 6mm of lead (μ_{Pb}=5.8 mm^{-1})?

4. Prove that in Hydrogen atom, for n>>1, the frequency of the photon emitted from n-to-n-1 transition is the same as the rotational frequency of the electron.

5. What are the maximum and minimum wavelengths of light emitted from Balmer series?

6. When Hydrogen is excited by 12.2eV electrons, what are the possible wavelengths of the emitted photons?

7. If the life-time of the first excited state (n=2) in Hydrogen atom is 10^{-10}s, how many turns does an electron rotate before it drops down to the n=1 state?