SCPY322 Nuclear and Particle Physocs

Second Semester, 2020-21

Problem Set #1

Date: March 5, 2021. Due date: March 12, 2021 (via my mail-box)

1. (10 pt.) Use the uncertainty principle estimate the minimum kinetic energy of an electron confoned within a nucleus of size 10 fm. (Electron is fully relativistic.)

2. (a) (10 pt.)If the kinetic energy of a neutron, confined inside a rigid cubic box, is 10 MeV in its ground state, calculate the size of this box.
   (b) (10 pt.) What are the energies of the next three excited states ?