APPLIED PHYSICS (SUMMER)

ASSIGNMENT NO 1

Max Marks (04)

Attempt all the questions.

1. The average distance "r" between the electron and proton in the hydrogen atom is 5.5×10^{-11}m. (a) what is the magnitude of the force between these two particles? (b) What is the magnitude of the average gravitational force that acts between these two particles? ($G=6.67 \times 10^{-11} Nm^2/kg^2$, mass of electron = 9.11×10^{-31}kg and mass of the proton = 6.67×10^{-27}kg).

2. The nucleus of an iron atom has a radius about 4×10^{-15}m and contain 26 protons. What repulsive electrostatic force act between two protons in such a nucleus if they are separated by a distance of one radius?

3. What must be the distance between point charges having magnitude of 26.3µC and -47.1µC for the attractive electrical force between them to have a magnitude of 5.66N?