

PH-105 Assignment Sheet - 2 (Quantum Mechanics)

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1. Compare the momentum of an electron with that of a photon whose energy is same as the kinetic energy of the electron.

Solution :

$$E_p = K_e$$

$$p_p = E/c$$

$$p_e = \sqrt{2m_e K}$$

$$p_p/p_e = E/(c\sqrt{2m_e E}) = \sqrt{E/(2c^2 m_e)}$$