Boundary Conditions at a plane interface between two media: The boundary conditions are given as follows —

(1) The normal component of magnetic induction is directly and continuously across a surface of discontinuity by an amount equal to free surface density of charge at the boundary

$$D_{1n} - D_{2n} = 0$$

(2). The normal component of the magnetic induction is continuous across a surface of discontinuity i.e,

$$B_{1n} - B_{2n} = 0$$

(3). The tangential component of magnetic intensity is discontinuous by an amount to the free surface current density i.e,

$$H_{1n} - H_{2n} = J$$

(4) The tangential component of E is continuous across a surface of discontinuity i.e,

$$E_{1n} - E_{2n} = 0$$

These all above mentioned conditions are known as boundary conditions at a plane interface between two media..