

1. The relative permittivity for the distilled water is 80, find its permeability.(10%)
2. The vector magnetic field measured for a student's experiment is $\mathbf{A} = a_x(3y - c_1z) + a_y(c_2x - 2z) + a_z(c_3y - z)$, Give your comment for the c_1 , c_2 , and c_3 .(10%)
3. Charge Q_1 is uniformly distributed over a circular plate with the radius a and Charge Q_2 is uniformly distributed over its outer ring from the radius a to b . Determine the electric potential and field at a point on the axis perpendicular to the plate and through its center.(20%)
4. A positive point charge Q is located at distances d_1 and d_2 , respectively, from two grounded conducting half-planes having the angle of $2\pi/3$, as shown in Figure 1. Determine the force on Q .(20%)
5. Draw a figure to illustrate the Hall effect. Define the Hall field, Hall voltage, and Hall coefficient.(20%)
6. Determine the electromagnetic field of a Hertzian dipole.(20%)

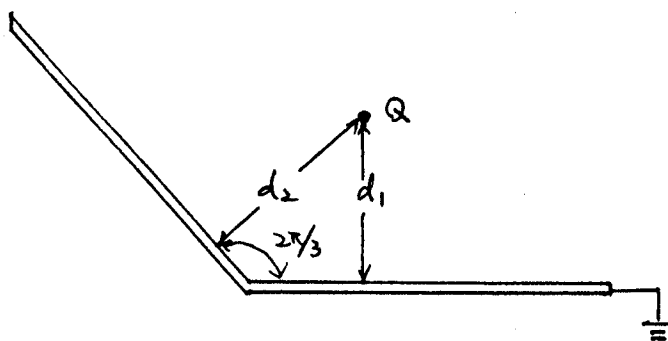


Figure 1