

**Department of Electronics and Communication Engineering**

**SUBJECT: EMTL (PC 404 EC)**

**ASSIGNMENT-I**

1. Explain differential length (dl), differential surface (ds) and differential volume (dv) in Cartesian, cylindrical and spherical system.
2. Determine the electric field intensity due to infinite line charge distribution using Coulomb’s law?
3. State and explain Gauss’s law?
4. Determine the electric field intensity due to infinite line charge distribution using Gauss’s law?
5. Explain the boundary conditions in between conductor and free space in electric field?
6. Point charges 1mC and -2mC are located at (3, 2, -1) and (-1, -1, 4), respectively. Calculate the electric force on a 10nC charge located at (0, 3, 1) and the electric field intensity at that point.
7. A point charge of 16 nC is located at Q (2, 3, 5) in free space, and a uniform line charge of 5 nC/m is at the intersection of the planes x = 2 and y = 4. If the potential at the origin is 100 V, find ‘V’ at P (4, 1, 3).

**Note**: Last date for submission of assignment-I is 16-02-2019