

- Number of electrons present in a negative charge of 8C is
(a) 5×10^{19} (b) 2.5×10^{19} (c) 12.8×10^{19} (d) 1.6×10^{19}
- A hemisphere is uniformly charged. The electric field at a point on a diameter away from the centre is
directed
(a) Perpendicular to the diameter (b) parallel to the diameter
(c) At an angle tilted towards the diameter (d) at an angle tilted away from the diameter.
- Dielectric constant of water is 80. What is its permittivity?
- State the limitations of Coulomb's law.
- At what points, dipole field intensity is parallel to the line joining the charges?
- Sketch the electric lines of force due to point charges (i) $q > 0$ (ii) $q < 0$.
- Find out electric field strength at any point on any line of an electric dipole. Hence, find out electric field on axial line.
- Find out electric field strength at any point on any line of an electric dipole. Hence, find out electric field on equatorial line.
- Use Gauss's law to obtain the expression for the electric field due to a uniformly charged thin spherical shell of radius R at a point outside and inside the shell. Draw a graph showing the variation of electric field with r, for $r > R$ and $r < R$.
- Use Gauss's theorem deduce an expression for
(a) Electric field intensity at any point due to a thin infinitely long wire of charge /length is C/m.
(b) Electric field due to a uniformly charged infinite plane sheet and show that it is independent of the distance from it.