

Coulomb's Law + Electric Field

**PLEASE GIVE THE EXAMPLES, DIAGRAMS AND FLOW CHARTS WHEREVER APPLICABLE.

1. At what point potential due to a point charge is zero?
2. Define eV. Find how many joules are there in it?
3. Find the amount of work done in moving a charge of $5\mu\text{C}$ from one point to another point 10 cm apart on the surface of metallic sphere having a charge of $100\mu\text{C}$.
4. Why flux is 0 when charge is placed outside the closed surface?
5. Show that $E = -dV/dR$
6. Define electric flux. How many types of flux is there. Explain each.
7. Find the potential at any point due to dipole.
8. State and prove gauss theorem by using it derive coulomb's law.
9. Show that potential difference is equal line integral of electric field.
10. Find the electric field due to solid sphere inside it and outside it.
11. The sides of a rectangle ABCD are 15 cm and 5 cm. Two point charges of $+2\mu\text{C}$ and $-5\mu\text{C}$ are placed at the corners of A & C respectively. Find the work done in carrying a charge of $3\mu\text{C}$ from point B to D.

