

Objectives for Chapters 19 & 20

After completion of these two chapters you should be able to:

1. Define

- Electric charge,
- Coulomb,
- Electrical conductor,
- Electrical insulator,
- Charging by contact and by induction,
- Coulombs law,
- Permittivity of free space,
- Electric field,
- Gausses law,
- Electric potential,
- Voltage,
- Potential difference,
- Electron volt,
- Equipotential surface,
- Capacitor,
- Capacitance,
- Dielectric,
- Capacitors electric potential energy,
- Energy density
- CRT
- Oscilloscope

2. Calculate the number of charged particles needed for any given charge. (Quantization of electric charge.)
3. Use coulomb's law to find the electrostatic force between particles.
4. Calculate the electric field about a point charge.
5. Calculate the force of an electric field on an object with a particular charge.
6. Calculate the work done in moving a charge through a potential difference.
7. Calculate the speed of charged particles as they leave an accelerator (gun).
8. Calculate the potential difference created by point charges.
9. Calculate the radius of an equal potential surface of a given value about a point charge.
10. Calculate the number of excess electrons on a plate of a charged capacitor for a given voltage.
11. Find the capacitance of a parallel plate capacitor given its dimensions and the dielectric constant.
12. Calculate the capacitance for a known voltage and charge.

Look at all of the "QUESTIONS" at the end of each chapter and make sure you can do the following "PROBLEMS".

Ch. 19: 1, 5, 9, 13, 15, 17, 19, 28(How does this compare t their gravitational attraction?), 33, 35, 39, 41, 49, 52, & read 57

Ch. 20: 3, 4, 5, 7, 13, 17, 18, 21, 23, 27, 37, 41, 43, 49, 53, 54, 55, & 57

& If you are thinking about Medicine, Biology, Chemistry, or even if you just like to watch "ER", peruse pages 660 - 661, 668 - 669, and example 20-7.