**Unit 5: Electricity and Some Magnetism** Chapters 18-23

1. History of Electricity and Magnetism discoveries (amber effect and loadstone effect)\*
2. Law of electrostatics as stated by Ben Franklin.\*
3. Millikan’s Oil Drop Experiment \*

 e = 1.602 x 10-19 C, Q = Ne, 1 C = 6.24 x 1018e

1. Current Electricity I = Q/t unit A
2. DC v.s. AC \*
3. Conventional Current v.s. Electron Flow \*
4. Electric Potential Difference (Voltage) V = W/Q or V = E/Q Unit V = J/C

 E = VQ

 E = V It

1. Series v.s. Parallel Circuits

~ Kirchhoff’s Voltage and Current Laws

~ finding unknown V’s and I’s (circuit analysis)

1. Resistance R = V/I\* Ohm’s Law, Ohmic Devices, Four factors R = ρL/A

~ RT = R1 + R2 + R3... in series \*

~ 1/RT = 1/R1 + 1/R2 + 1/R3 … in parallel \*

1. Law of Magnetic Poles \*
2. Explain how the earth is a big magnet and how the polarity has shifted over the earth’s history.
3. Lenz’s Law (find polarity and direction of current in solenoid)
4. Motor Prinicple F = BILsinθ and direction