ELECTRICAL MEASUREMENT & MEASURING INSTRUMENTS

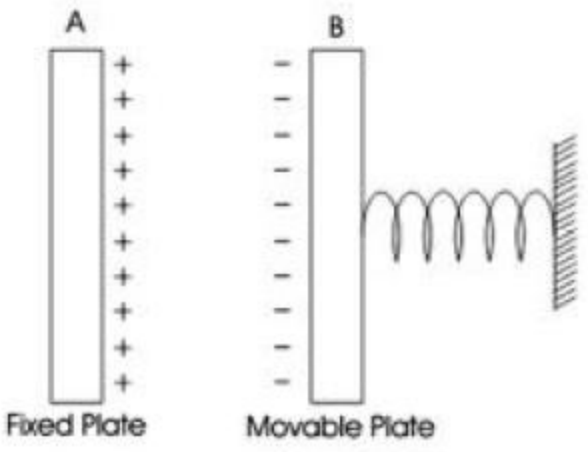
UNIT 1 Part B

Analog Measurement of Electrical Quantities

Electrostatic type ammeters & voltmeters

- The **electrostatic type instrument use static electrical field to produce the** deflecting torque.
- These types of instrument are generally used for the measurement of high voltages as well as low voltage.

  One of the plates is fixed and other plate is free to move, plates are oppositely charged in order to have attractive force between them. Due to attractive force movable plate will move towards the stationary or fixed plate till the moving plate stored maximum electrostatic energy.



Advantages of Electrostatic Type Instruments

- Measure both ac and dc voltage and the reason are very obvious the deflecting torque is directly proportional to the square of the voltage.
- Power consumption is quite low in these types of instruments as the electric current drawn by these instruments is quite low.
- We can measure high value of voltage.

Disadvantages of Electrostatic Type Instruments

- These are quite costly as compared to other instruments and also these have large size.
- The scale is not uniform.
- The various operating forces involved are small in magnitude.

Electrodynamic Wattmeter

- Electrodynamic type instruments is directly proportional to product of instantaneous values of currents flowing through both the coils and the rate of change of flux linked with the circuit.