

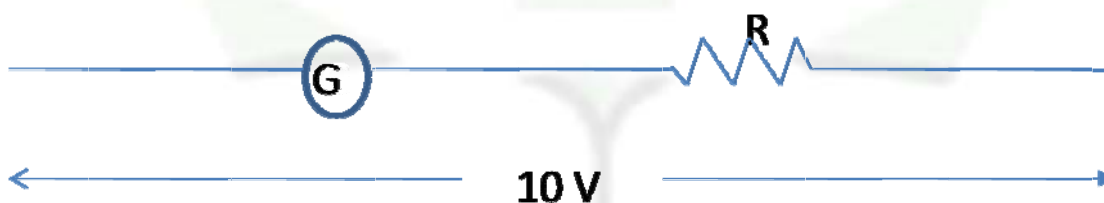


## Voltmeter

**Voltmeter:** A voltmeter is an instrument used mainly to measure potential difference. A galvanometer can be connected into a voltmeter by connecting a high resistance in series with the galvanometer coil.

A galvanometer has a resistance of  $50\Omega$  and gives full scale deflection with  $10\text{ mA}$  current. Convert it into a voltmeter giving a full scale deflection with  $10\text{ volt}$ .

$V=IR$ ,  $I=10/50=0.2\text{ amp}$ , but the galvanometer can measure  $.01\text{ amp}$  hence to reduce the current through the galvanometer up to  $.01\text{ amp}$  the resistance is to be increased hence an extra resistance should be connected in series with the galvanometer coil.



$$10^{-2} = \frac{10}{50 + R}$$
$$R = 950\Omega$$