A galvanometer of resistance 120Ω a full scale deflection with a current of 0.0005A. How would you convert it to an ammeter that reads a maximum current of 5A?

Answer:
Since Galvanometer is a very sensitive instrument therefore it can't measure heavy currents. In order to convert a Galvanometer into an Ammeter, a very low resistance known as "shunt" resistance is connected in parallel to Galvanometer. Value of shunt is so adjusted that most of the current passes through the shunt. In this way a Galvanometer is converted into Ammeter and can measure heavy currents without fully deflected.
Let resistance of galvanometer $R_g = 120\ Ohm$ and it gives full-scale deflection when current $I_g = 0.0005\ A$ is passed through it. Then, $V_g = I_g\ R_g$.
Let a shunt of resistance (R_S) is connected in parallel to galvanometer.
If total current through the circuit is $I = 5\ A$.
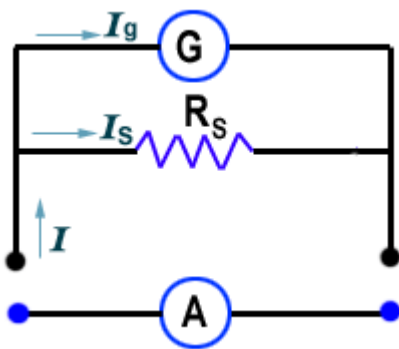
Then current through shunt:
$I_s = I - I_g$
potential difference across the shunt:
$V_s = I_s R_s$
or
$V_s = (I - I_g)R_s$
But:
$V_s = V_g$
$(I - I_g)R_s = I_g\ R_g$

$R_s = \frac{I_g}{(I - I_g)}R_g$

In our case:
$R_s = \frac{0.0005\ A}{(5\ A - 0.0005\ A)}120\ Ohm = 0.012\ Ohm$