Condition:

2 equal resistances are connected in the gaps of a meter bridge. If the resistance in the left gap is increased by 10%, the balancing point shifts where and by how much?

Solution:

Since a meter bridge was wire of 100 cm, so if the 2 resistance are equal, the balance point is at 50 cm.

Now, if the left resistance is increased by 10%, it becomes 1.1 times its original value.

So balance point L:

$$\frac{1.1R}{R} = \frac{L}{100 - L} \rightarrow 110 - 1.1L = L \rightarrow 110 = 2.1L \rightarrow L = 52.4\ cm\ approx.$$

So the balance point L has shifted right by 2.4cm. So in terms of %, it has shifted right by $\left(\frac{2.4 \times 100}{50}\right)\% = 4.8\%$ to the right.

Answer: 4.8%