

ERROR

EXERCISE – I

SINGLE CORRECT

1. C

$$\text{M.S.D.} = 1 \text{ mm}$$

$$\text{L.C.} = 0.02 \text{ cm} \\ = 0.2 \text{ mm}$$

$$\text{L.C.} = \text{M.S.D.} - \text{V.S.D.}$$

$$= 1 \text{ mm} - \frac{m}{n} = 0.02$$

$$\Rightarrow \frac{m}{n} = 0.08$$

2. A

3. A,B,C

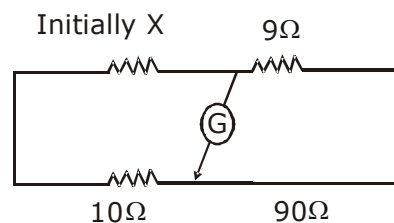
4. A

High Resistivity for low current flow & low Heating And low temp coef . so that Resistance doesn't vary with temprature

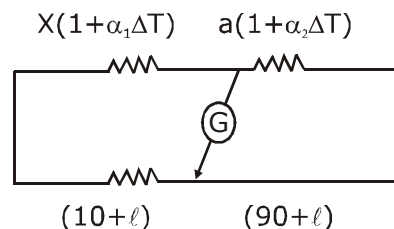
5. A

$$x(90) = 9(10)$$

$$x = 1\Omega$$



In second condition



$$\text{Now } x(1 + \alpha_1 \Delta T)(90 - \ell) = 9(1 + \alpha_2 \Delta T)(10 + \ell)$$

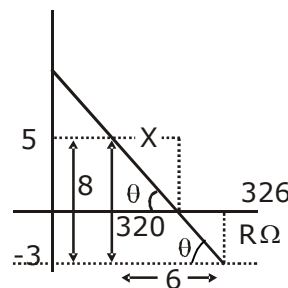
$$\frac{(1 + \alpha_1 \Delta T)}{(1 + \alpha_2 \Delta T)} = \frac{9(10 + \ell)}{(90 - \ell)}$$

$$1 + (\alpha_1 - \alpha_2)\Delta T = \left[1 + \frac{\ell}{10}\right] \left[1 + \frac{\ell}{90}\right]$$

$$9(\alpha_1 - \alpha_2)\Delta T = \ell$$

6. B

deflection



$$\tan \theta = 8/6 = \frac{4}{3}$$

$$\theta = 53^\circ$$

$$\approx \text{ly } \tan \theta = 5/x \Rightarrow x = 3.75$$

$$\text{So } R = 320 + x = 323.75 = 3.24 \Omega$$

7. D

ensures zero Magnetic field