

Q. 05 If a wire is stretched to make it 0.1% longer, its resistance will : [2011]

- (a) increase by 0.2%      (b) decrease by 0.2%  
(c) decrease by 0.05%    (d) increase by 0.05%

05 (a) Resistance of wire

$$R = \frac{\rho l}{A} = \frac{\rho l^2}{C} \text{ (where } Al = C \text{)}$$

∴ Fractional change in resistance

$$\frac{\Delta R}{R} = 2 \frac{\Delta l}{l}$$

∴ Resistance will increase by 0.2%