

**Question 33439** Thermal dependence of resistance with respect to temperature in metals is  $R = R_0(1 + \alpha T)$ , where  $\alpha = \frac{1}{273}$ ,  $T$  is the temperature in Kelvin. Knowing the resistance at 20 degrees, obtain  $6 = R_0(1 + \frac{293}{273})$ , from where  $R_0 = 2.89$  ohm. Hence, knowing  $R_0$ , for temperature  $T = 34$  deg,  $R = 2.89(1 + \frac{307}{273}) = 6.14$  ohm.