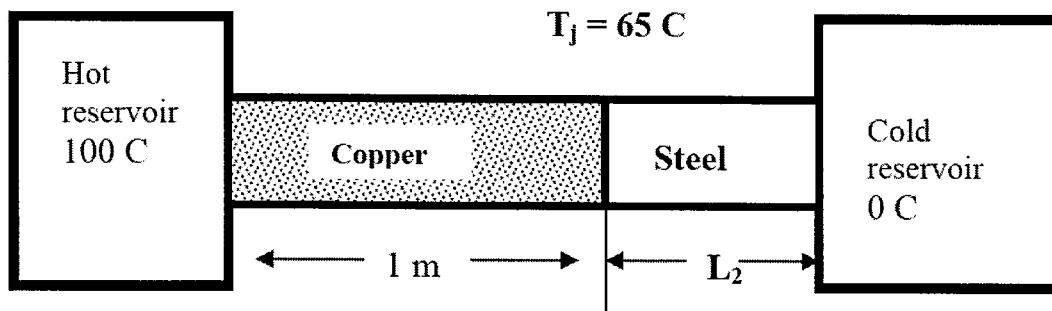


An isolated rod is in thermal contact with hot reservoir at one end and with cold reservoir at other end. The rod consists of a 1.00 m section of copper joined by a section of length  $L_2$  of steel. Both rods have the same cross section area of  $4.00 \text{ cm}^2$ . The temperature of copper-steel junction  $T_j$  is  $65 \text{ }^\circ\text{C}$ . Find  $L_2$ . The thermal conductivity of steel is  $14 \text{ W/m.K}$  and for copper is  $401 \text{ W/m.K}$ .



$$P_{\text{cond}} = \frac{k_c A_c (T_H - T_j)}{L_c} = \frac{k_s A_s (T_j - T_c)}{L_s}$$

$$401 \frac{100 - 65}{1} = \frac{14 (65 - 0)}{L_2}$$

$$L_2 = \frac{14 \times 65}{401 (100 - 65)} = 0.065 \text{ m}$$

04 Sep	11 Sep	18 Sep	25 Sep	2 Oct	9 Oct	23 Oct	30 Oct	6 Nov	13 Nov	20 Nov	27 Nov	4 Dec	11 Dec	18 Dec
Solutions of the quizzes can be found on the webpage: <a href="http://faculty.kfupm.edu.sa/phys/aljalal/phys102.htm">http://faculty.kfupm.edu.sa/phys/aljalal/phys102.htm</a>														
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