(i) Represent the arrangement by a conventional control-system block diagram. Identify the following elements in the block diagram:

input; error detector (comparator); controller; controlled element; detecting element and feedback loop.

(ii) Derive an expression for the transfer function of the system, in terms of the system parameters k_1, k_2, k_O and k_t.

(iii) Using the data given in TABLE A, calculate the oven temperature when the potentiometer is at its mid-point.

PARAMETER	VALUE
k_t	10 μV/°C
k_O	6.9 °C/A
k_1	6 A/V
k_2	2400

TABLE A