2 (a) State what is meant by *work done*.

....

.... [1]

(b) Use your answer in **(a)** to show that the SI base units of energy are $kg\,m^2\,s^{-2}$.

[1]

(c) A metal rod is heated at one end so that thermal energy flows to the other end.
The thermal energy E that flows through the rod in time t is given by

$$E = \frac{cA(T_1 - T_2)t}{L}$$

where A is the cross-sectional area of the rod,
      T_1 and T_2 are the temperatures of the ends of the rod,
      L is the length of the rod,
and c is a constant.

Determine the SI base units of c.

SI base units .... [3]

[Total: 5]