



Section A

Answer **all** the questions in this section.

- 1 (a) Express the SI unit of energy, the joule, in terms of base units.

base units =[2]

- (b) The resistance of a heater is measured and found to be $(224 \pm 6) \Omega$. The heater and an ammeter are in series in a circuit and the reading on the ammeter is $(3.72 \pm 0.04) \text{ A}$. The heater is switched on for a time of $(512 \pm 5) \text{ s}$.

Calculate the energy supplied to the heater in this time and the uncertainty in your answer.

energy = \pm J [4]

[Total: 6]