

Answer **all** the questions in the spaces provided.

- 1 (a) (i) Define *resistance*.

.....
[1]

- (ii) A potential difference of 0.60 V is applied across a resistor of resistance 4.0 GΩ.

Calculate the current, in pA, in the resistor.

current = pA [2]

- (b) The energy E transferred when charge Q moves through an electrical component is given by the equation

$$E = QV$$

where V is the potential difference across the component.

Use the equation to determine the SI base units of potential difference.

SI base units [3]

[Total: 6]