

- 1 (a) State what is meant by work done.

.....
..... [1]

- (b) Use the answer to (a) to determine the SI base units of power.

SI base units [2]

- (c) The maximum useful output power P of a car travelling on a horizontal road is given by

$$P = v^3 b$$

where v is the maximum speed of the car and b is a constant.

For the car,

$P = 84 \text{ kW} \pm 5\%$
and $b = 0.56 \pm 7\%$ in SI units.

- (i) Calculate the value of v .

$v = \dots\dots\dots \text{ms}^{-1}$ [2]

- (ii) Determine the absolute uncertainty in the value of v .

absolute uncertainty = ms^{-1} [2]

[Total: 7]