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.

$v =$ ..... m s^{-1} [2]

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

absolute uncertainty = ... m s^{-1} [2]

[Total: 7]