1   **(a)** Distinguish between vector and scalar quantities.

....

....

.... [2]

(b) The electric field strength E at a distance x from an isolated point charge Q is given by the equation

$$E = \frac{Q}{x^2 b}$$

where b is a constant.

(i)   the definition of electric field strength to show that E has SI base units of $kg\,m\,A^{-1}\,s^{-3}$.

[2]

(ii)   the units for E given in **(b)(i)** to determine the SI base units of b.

SI base units of b .... [2]

[Total: 6]