

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

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

[2]

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

SI base units of b [2]

[Total: 6]