

- 7 A β^- particle from a radioactive source is travelling in a vacuum with kinetic energy 460 eV. The particle enters a uniform electric field at a right-angle and follows the path shown in Fig. 7.1.

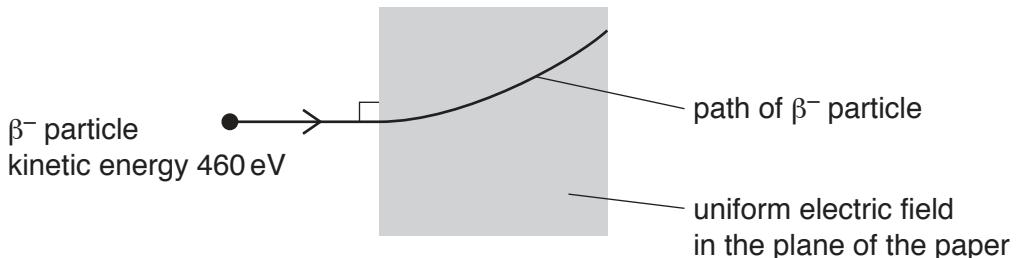


Fig. 7.1

- (a) The direction of the electric field is in the plane of the paper.
On Fig. 7.1, draw an arrow to show the direction of the electric field. [1]
- (b) Calculate the speed of the β^- particle before it enters the electric field.

$$\text{speed} = \dots \text{ m s}^{-1} \quad [3]$$

- (c) Other β^- particles from the same radioactive source travel outside the electric field along the same incident path as that shown in Fig. 7.1.

State and briefly explain whether those β^- particles will all follow the same path inside the electric field.

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[2]

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