

7 (a) Define electric potential.

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

(b) Fig. 7.1 is a **full-scale** diagram that shows a series of equipotential lines around a few point charges. A, B and C are points within the field.

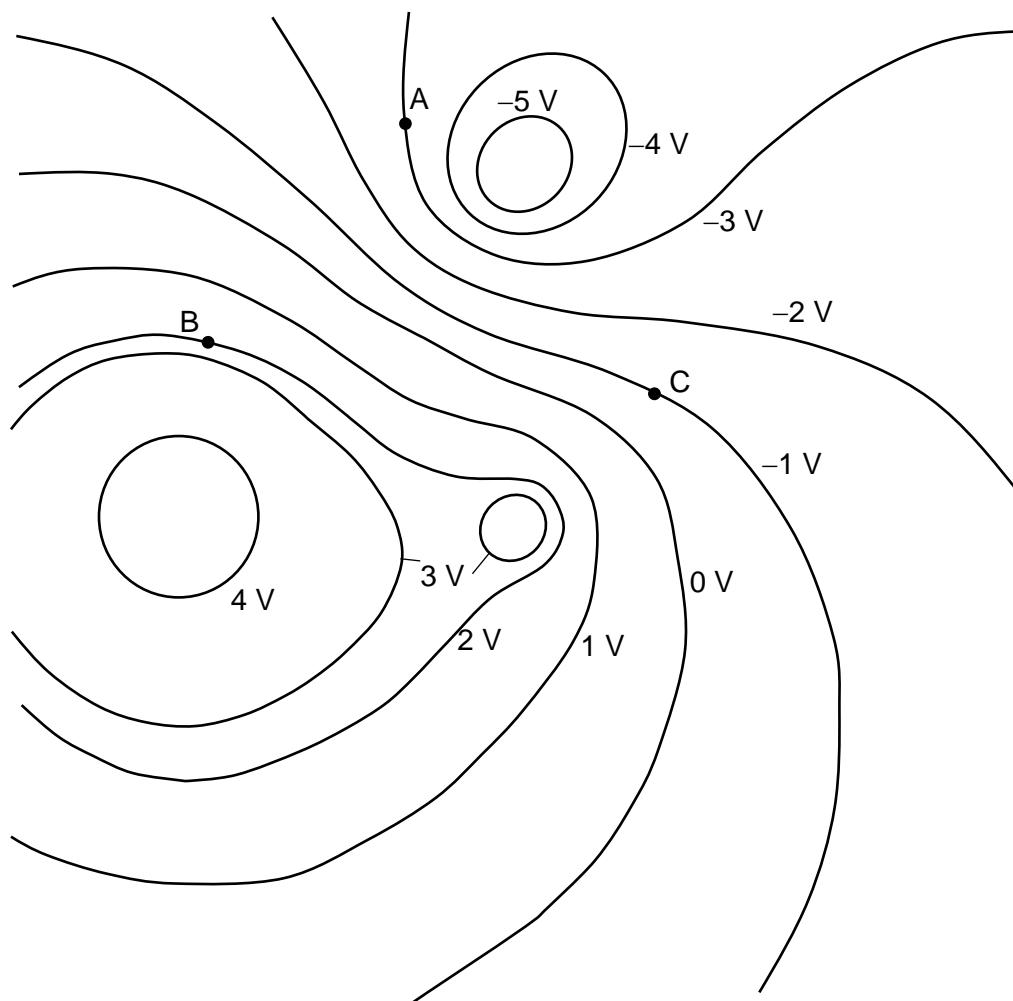


Fig. 7.1 (drawn to scale)

(i) On Fig 7.1, sketch the electric field line that joins points A and B. Label the line E. Indicate the direction of the field line with an arrow drawn on the line.

[2]

- (ii) An electron moves from point A with an initial speed of $2.6 \times 10^6 \text{ m s}^{-1}$, eventually reaching point B.

Calculate the speed of the electron at point B.

speed = m s^{-1} [3]

- (iii) Using Fig. 7.1, determine the magnitude of the electric force experienced by an electron placed at point C. Show your working clearly.

electric force = N [2]