

- 5 Two point charges of $+2.4 \mu\text{C}$ and $-2.9 \mu\text{C}$ are placed at points A and B respectively in a vacuum. The distance AB is 0.15 m as shown in Fig. 5.1.

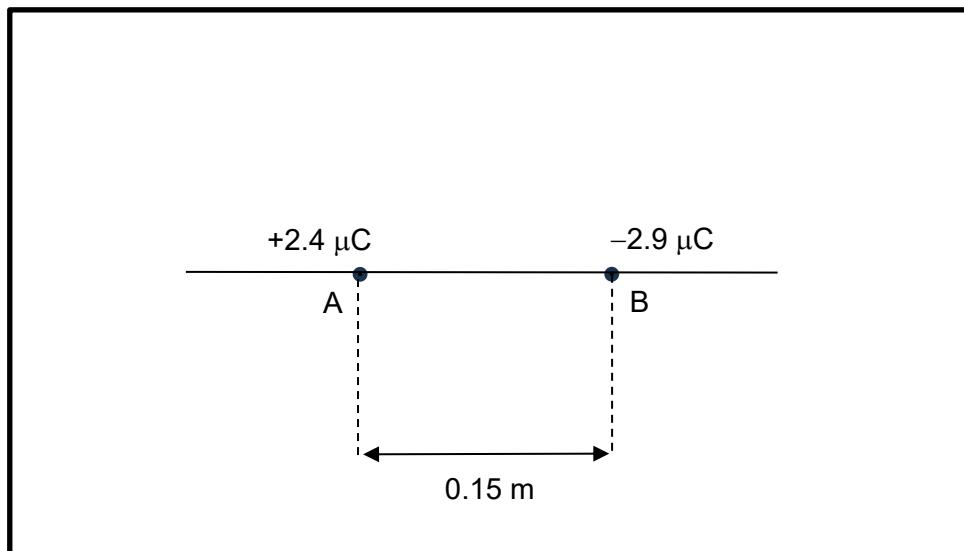


Fig. 5.1

It is required to find a point P at which the resultant electric field due to these two point charges is zero.

- (a) By considering the electric field strength due to the point charges, explain why point P must lie along the straight line with points A and B on it.

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[2]

- (b) Determine the position of point P from A. Show your working clearly.

distance from A = m

direction from A = [4]

- (c) On Fig. 5.1, sketch the equipotential line of potential = 0 V. [2]