6 Two horizontal metal plates X and Y are at a distance 0.75 cm apart. A positively charged particle of mass 9.6×10^{-15} kg is situated in a vacuum between the plates, as illustrated in Fig. 6.1.

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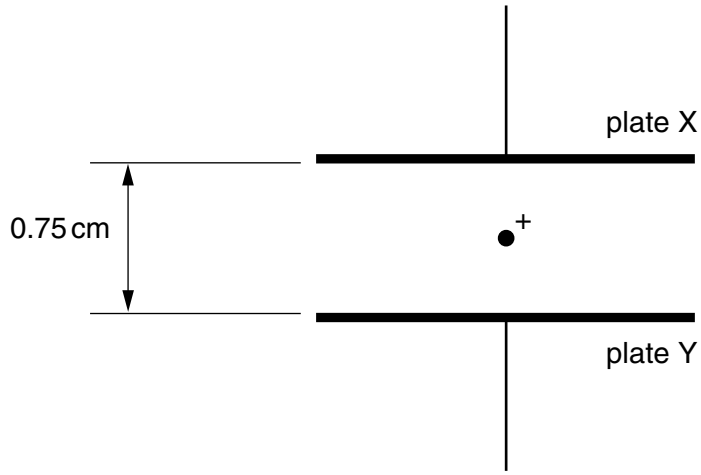

Fig. 6.1

The potential difference between the plates is adjusted until the particle remains stationary.

(a) State, with a reason, which plate, X or Y, is positively charged.

.....

.....

..... [2]

(b) The potential difference required for the particle to be stationary between the plates is found to be 630 V. Calculate

(i) the electric field strength between the plates,

field strength = ... N C^{-1} [2]

(ii) the charge on the particle.

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charge = …….. C [3]