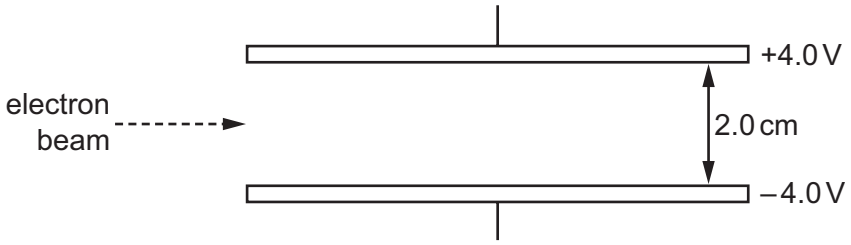
28 A horizontal beam of electrons is passed between two horizontal parallel plates, 2.0 cm apart, as shown.



The upper plate has an electrical potential of +4.0 V, and the lower plate has an electrical potential of –4.0 V.

What is the force on each electron when between the plates?

A 3.2×10^{-17} N downwards

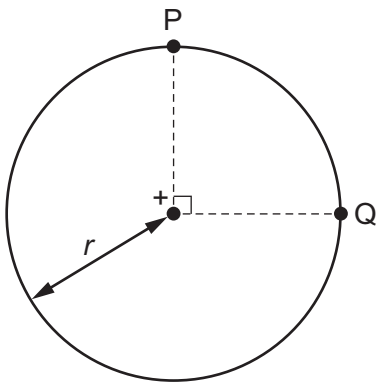
B 3.2×10^{-19} N upwards

C 6.4×10^{-19} N downwards

D 6.4×10^{-17} N upwards

29 The diagram shows two points P and Q which lie 90° apart on a circle of radius *r*.

A positive point charge at the centre of the circle creates an electric field of magnitude *E* at both P and Q.



Which expression gives the work done in moving a unit positive charge from P to Q?

A 0 **B** $E \times r$ **C** $E \times \left(\frac{\pi r}{2}\right)$ **D** $E \times (\pi r)$

Space for working