2 Fig. 2.1 is drawn full scale and shows the pattern of the electric field (solid lines) in and around a pair of parallel, charged metal plates. It also shows lines joining points at the same potential (dotted lines).

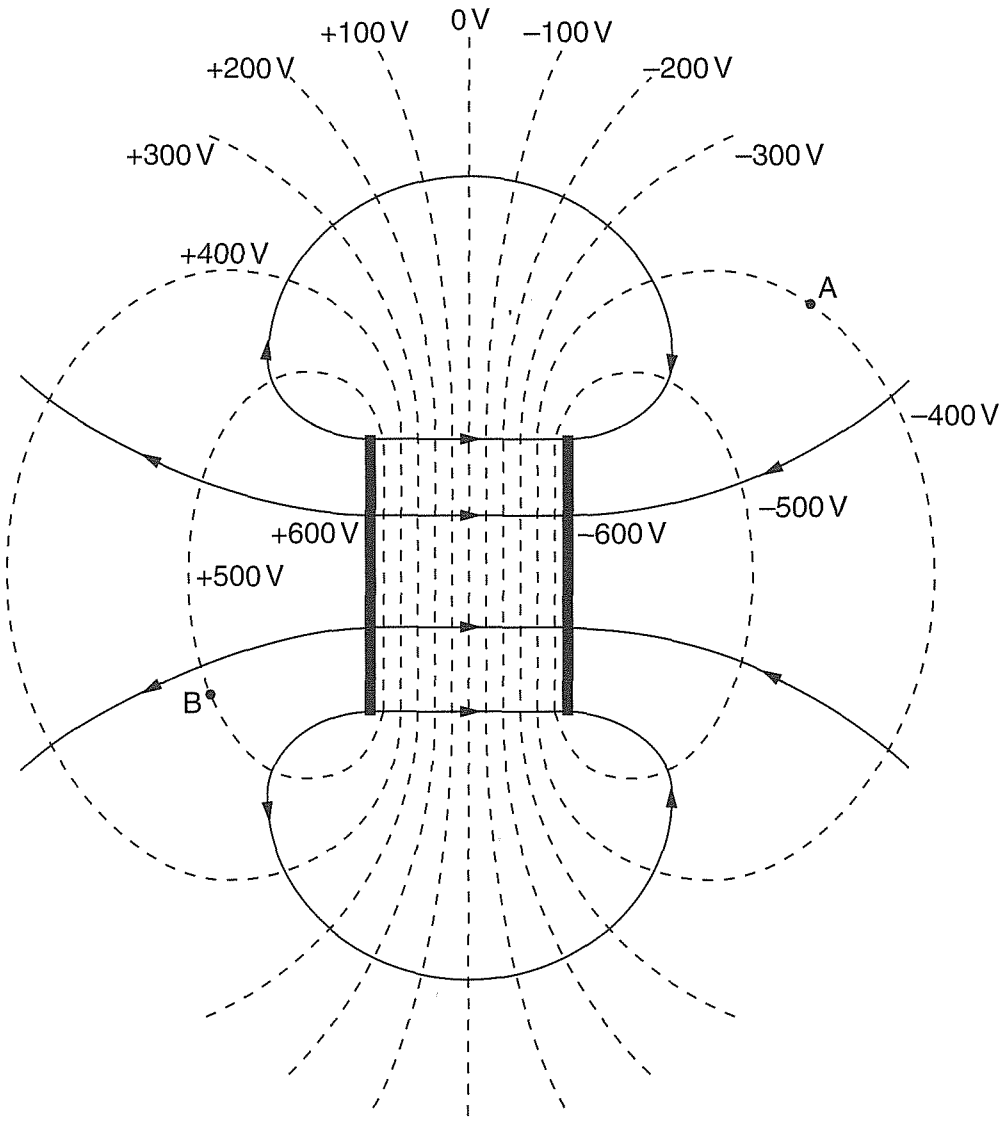

Fig. 2.1

(a) The plates have a separation of 2.5 cm.

From the diagram, deduce

(i) the value of the electric field strength between the plates,

electric field strength = ... [3]

(ii) the work that needs to be done to move a charge of 8.0×10^{-19} C from point A to point B.

work done = ... J [2]

(b) Explain why, in the absence of any other charged bodies, the potential will be zero along the centre line between the plates.

.....

.....

..... [2]