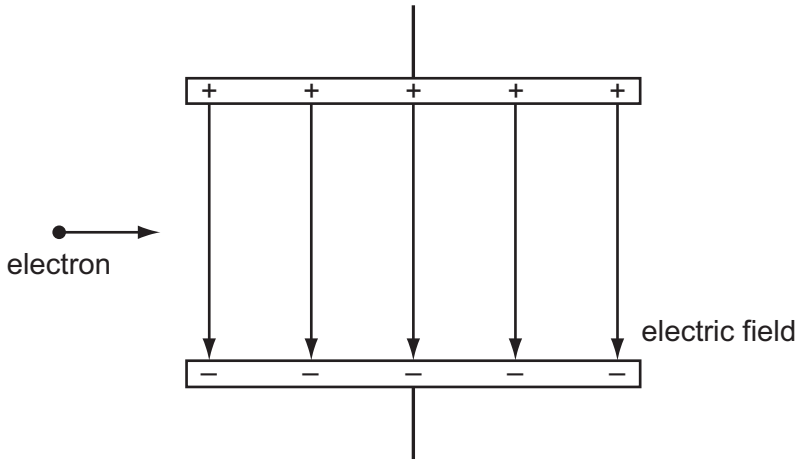
29 An electron, travelling horizontally at constant speed in a vacuum, enters a vertical electric field between two charged parallel plates as shown.



What are the horizontal and vertical components of the motion of this electron when it is in the field?

	horizontal component of motion	vertical component of motion
A	constant speed	acceleration upwards
B	constant speed	acceleration downwards
C	acceleration to the right	acceleration downwards
D	acceleration to the right	acceleration upwards

30 The electric field strength between a pair of parallel plates is E. The separation of the plates is doubled and the potential difference between the plates is increased by a factor of four.

What is the new electric field strength?

A E **B** $2E$ **C** $4E$ **D** $8E$

31 What is a correct statement of Ohm's law?

A The potential difference across a component equals the current providing the resistance and other physical conditions stay constant.

B The potential difference across a component equals the current multiplied by the resistance.

C The potential difference across a component is proportional to its resistance.

D The potential difference across a component is proportional to the current in it providing physical conditions stay constant.