30 In a uniform electric field, which statement is correct?

A All charged particles experience the same force.

B All charged particles move with the same velocity.

C All electric field lines are directed towards positive charges.

D All electric field lines are parallel.

31 Two metal plates are a distance of 30 cm apart in a vacuum.

A current exists between the two plates consisting of electrons moving at a constant speed of $1.5 \times 10^{6}\,\text{m s}^{-1}$.

At any instant, there is always just one electron travelling between the plates.

What is the current between the plates?

A $3.2 \times 10^{-26}\,\text{A}$

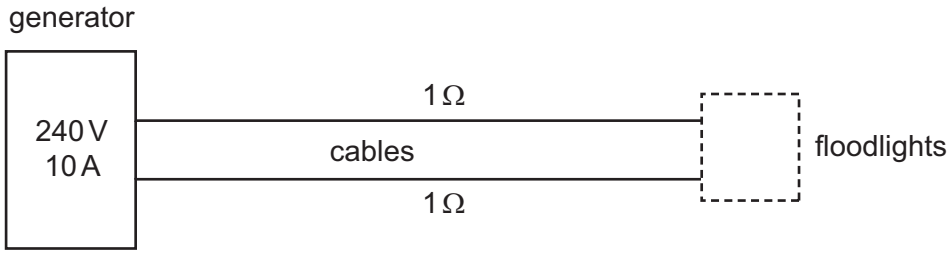
B $8.0 \times 10^{-13}\,\text{A}$

C $1.6 \times 10^{-12}\,\text{A}$

D $2.0 \times 10^{-7}\,\text{A}$

32 The diagram shows a portable generator connected by cables to floodlights. The generator produces a current of 10 A at a constant potential difference (p.d.) of 240 V.

The total resistance of the cables is 2 Ω.



What is the p.d. *V* across, and the power *P* delivered to, the floodlights?

	V/V	*P*/W
A	220	2000
B	220	2200
C	230	2000
D	230	2300