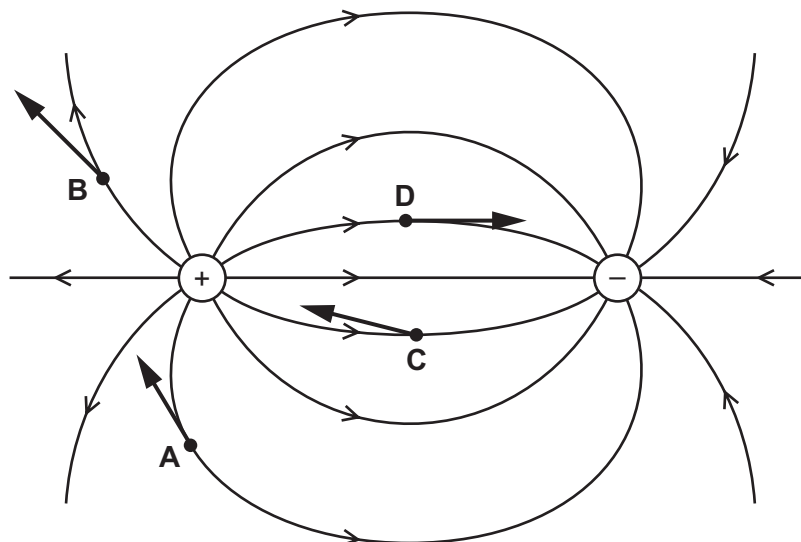


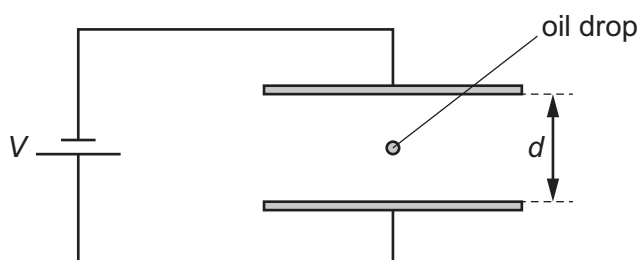
- 30** The diagram shows the electric field near a positively charged sphere and a negatively charged sphere.

Four electrons **A**, **B**, **C** and **D** are shown at different positions in the field.

On which electron is the direction of the force on the electron shown correctly?



- 31** An oil drop has mass  $m$  and charge  $q$ . The drop is held stationary in an electric field between two parallel horizontal plates, a distance  $d$  apart, as shown.



The potential difference between the plates is  $V$  and the acceleration of free fall is  $g$ .

What is the charge-to-mass ratio  $\frac{q}{m}$  of the oil drop?

- A**  $\frac{gd}{V}$       **B**  $\frac{V}{dg}$       **C**  $\frac{gV}{d}$       **D**  $\frac{d}{Vg}$