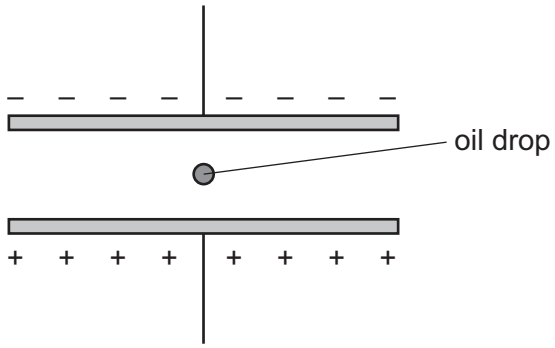
29 A very small oil drop of mass m carries a charge $+q$.



The potential difference across the plates is V and the separation is d.

The weight of the drop is balanced by the electric force. (Buoyancy forces may be considered to be negligible.)

Which formula gives the charge on the drop?

A $q = \frac{mgd}{V}$ **B** $q = \frac{mgV}{d}$ **C** $q = \frac{Vd}{mg}$ **D** $q = \frac{V}{mgd}$

30 Which electrical component is represented by the following symbol?

A a diode

B a potentiometer

C a resistor

D a thermistor

Space for working