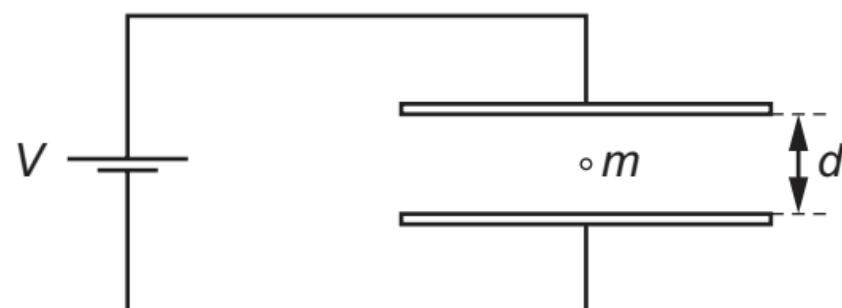


- 30 A charged oil drop of mass  $m$ , with  $n$  excess electrons, is held stationary in the uniform electric field between two horizontal plates separated by a distance  $d$ .



The voltage between the plates is  $V$ , the elementary charge is  $e$  and the acceleration of free fall is  $g$ .

What is the value of  $n$ ?

A  $\frac{eV}{mgd}$

B  $\frac{mgd}{eV}$

C  $\frac{meV}{gd}$

D  $\frac{gd}{meV}$

- 31 When the current in a wire is 5.0 A, the average drift speed of the conduction electrons in the wire