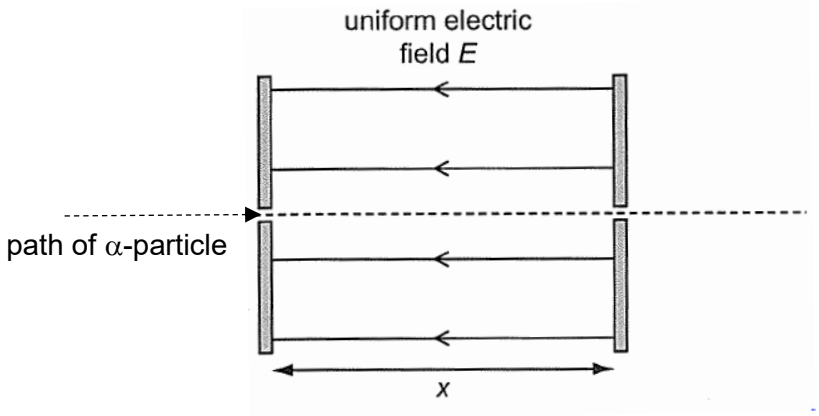
20 An alpha particle travels through a uniform electric field of field strength E. It enters the field with velocity v and then travels a distance x in a direction opposite to the field, as shown.



Given that e is the elementary charge, u is the unified atomic mass constant.
What will be the speed of the alpha particle when it leaves the field?

A $v - \sqrt{\frac{eEx}{2u}}$

B $\sqrt{v^2 - \frac{eEx}{2u}}$

C $v - \sqrt{\frac{eEx}{u}}$

D $\sqrt{v^2 - \frac{eEx}{u}}$