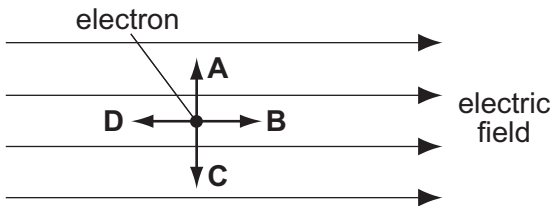
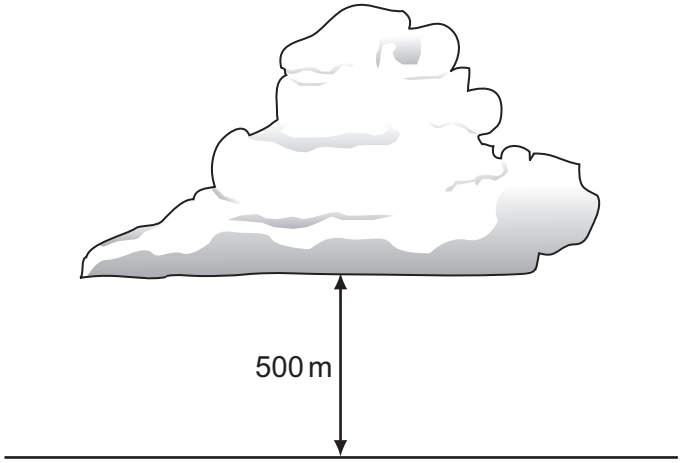
29 The diagram shows an electron in a uniform electric field.

In which direction will the field accelerate the electron?



30 The diagram shows a thundercloud whose base is 500 m above the ground.



The potential difference between the base of the cloud and the ground is 200 MV. A raindrop with a charge of 4.0×10^{-12} C is in the region between the cloud and the ground.

What is the electrical force on the raindrop?

A 1.6×10^{-6} N **B** 8.0×10^{-4} N **C** 1.6×10^{-3} N **D** 0.40 N

31 Two wires made of the same material and of the same length are connected in parallel to the same voltage supply. Wire P has a diameter of 2 mm. Wire Q has a diameter of 1 mm.

What is the ratio $\frac{\text{current in P}}{\text{current in Q}}$?

A $\frac{1}{4}$ **B** $\frac{1}{2}$ **C** 2 **D** 4

32 What is an equivalent unit to 1 volt?

A $1\,\text{J}\,\text{A}^{-1}$ **B** $1\,\text{J}\,\text{C}^{-1}$ **C** $1\,\text{W}\,\text{C}^{-1}$ **D** $1\,\text{W}\,\text{s}^{-1}$