

10.1 Electric Fields

Question Paper

Course	CIE A Level Physics (9702) 2019-2021
Section	10. Electric Fields
Topic	10.1 Electric Fields
Difficulty	Medium

Time allowed: 10

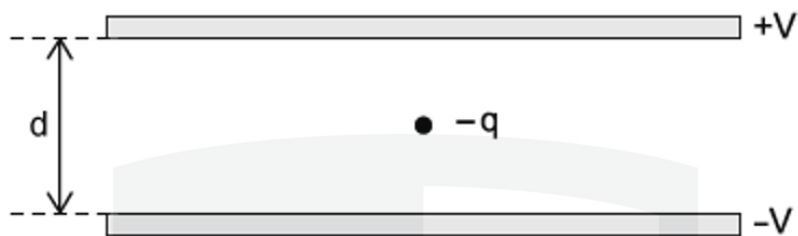
Score: /4

Percentage: /100

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Question 1

An oil droplet has charge $-q$ and is situated between two horizontal metal plates as shown in the diagram.



The separation of the plates is d . The droplet is observed to be stationary when the upper plate is at potential $+V$ and the lower plate is at potential $-V$.

For this to occur, what is the weight of the droplet?

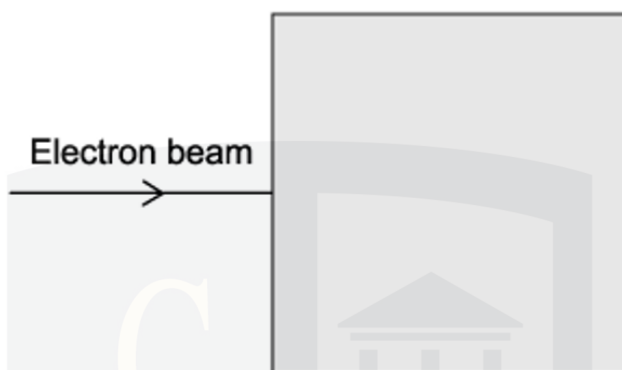
- A** $\frac{Vq}{d}$ **B** $\frac{2Vq}{d}$ **C** $\frac{Vd}{q}$ **D** $\frac{2Vd}{q}$

[1 mark]

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Question 2

In the diagram, the shaded area represents a uniform electric field directed away from the observer (at right-angles into the plane of the paper).



A horizontal beam of electrons enters the field, travelling from left to right.

In which direction is this beam deflected by the field?

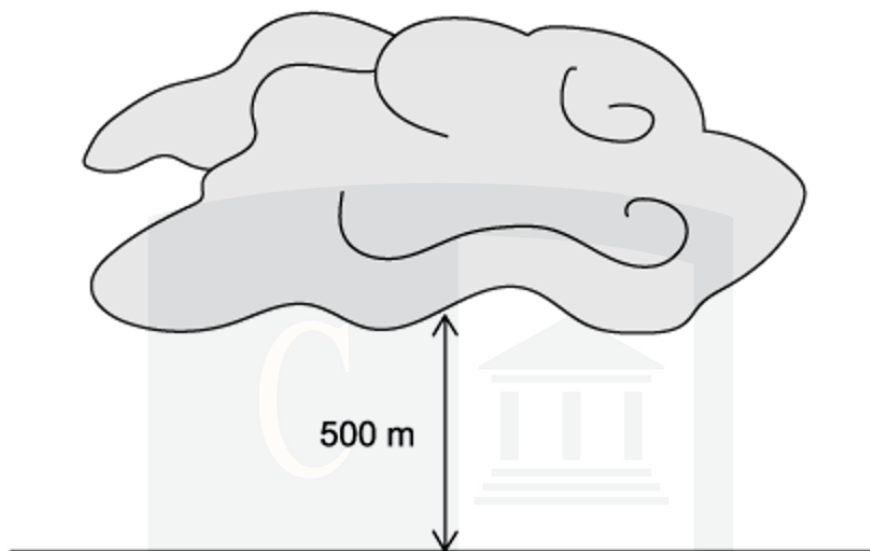
- A** upwards (in the plane of the paper)
- B** downwards (in the plane of the paper)
- C** away from the observer
- D** towards the observer

[1 mark]

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Question 3

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

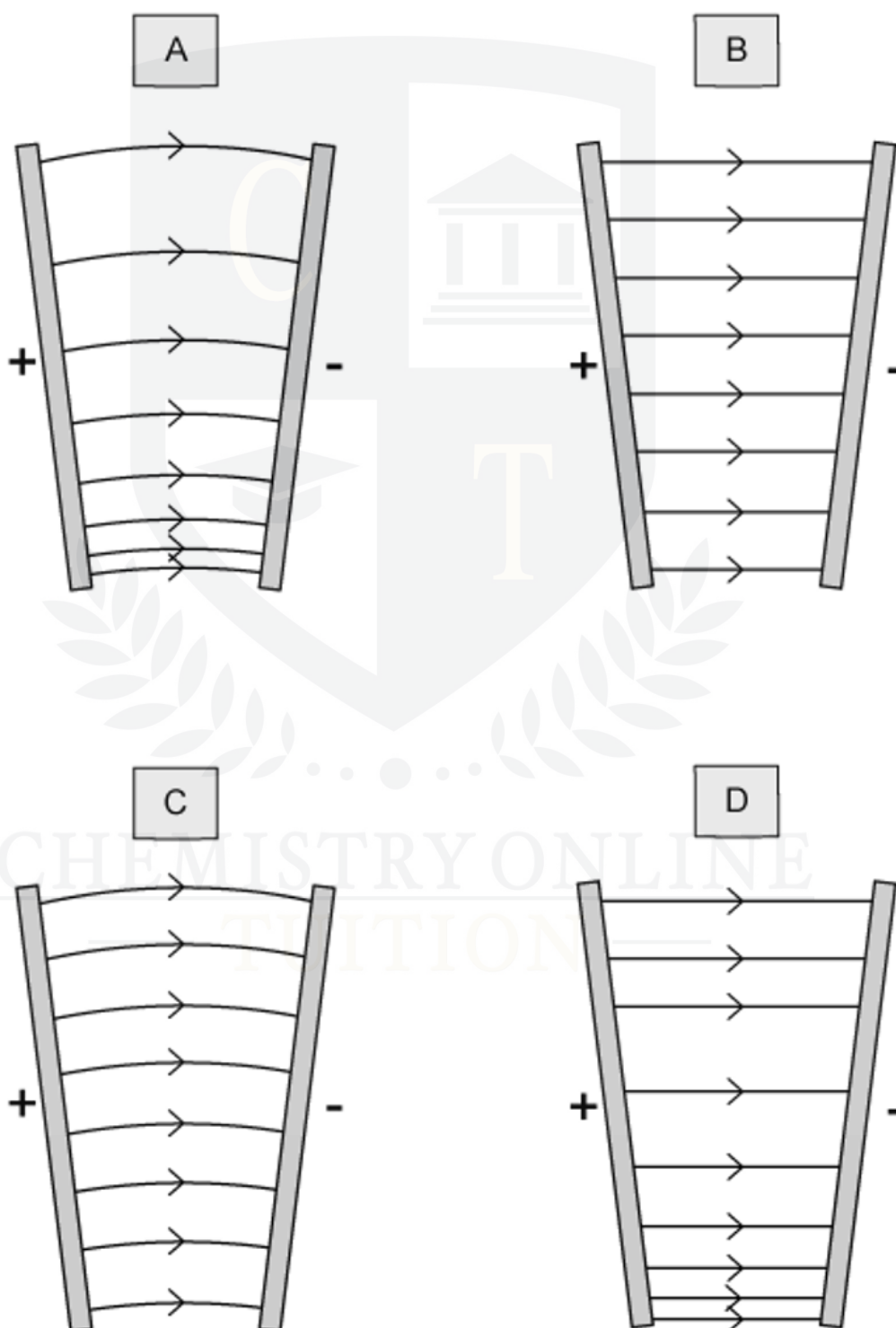
[1 mark]

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Question 4

A potential difference is applied between two metal plates that are not parallel.

Which diagram shows the electric field between the plates?



[1 mark]

