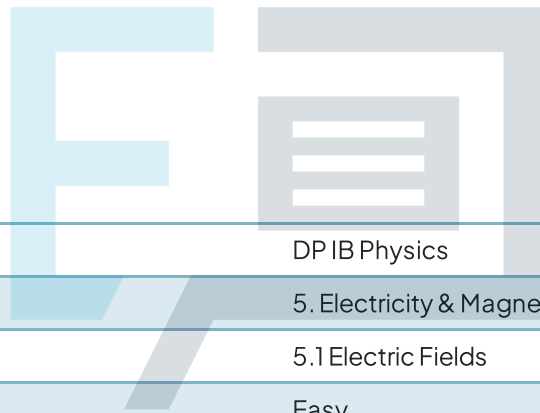




5.1 Electric Fields

Question Paper



Course	DP IB Physics
Section	5. Electricity & Magnetism
Topic	5.1 Electric Fields
Difficulty	Easy

Exam Papers Practice

To be used by all students preparing for DP IB Physics SL
Students of other boards may also find this useful

Question 1

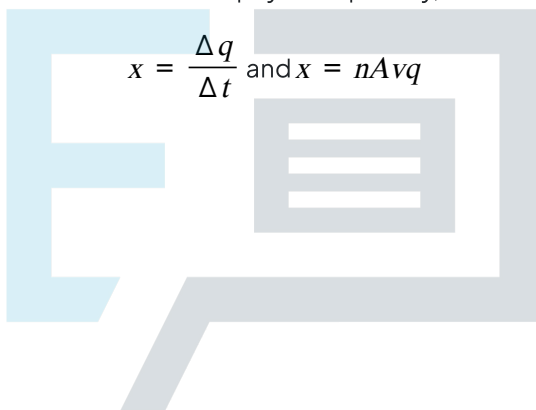
Identify the unit defined as 'the charge carried by an electric current of one ampere in one second'.

- A. Current.
- B. Potential difference.
- C. Coulomb.
- D. Ampere.

[1 mark]

Question 2

Two different equations can be used to calculate the same physical quantity, x .



$$x = \frac{\Delta q}{\Delta t} \text{ and } x = nAvq$$

What quantity is represented by x ?

- A. Drift velocity.
- B. Current.
- C. Charge on a charge carrier.
- D. Potential difference.

[1 mark]

Exam Papers Practice

Question 3

Select the correct quantity and unit for this definition;

'the rate of flow of electric charge past a cross-section of material'

	Quantity	Unit
A.	charge	coulomb
B.	charge	ampere
C.	current	coulomb
D.	current	ampere

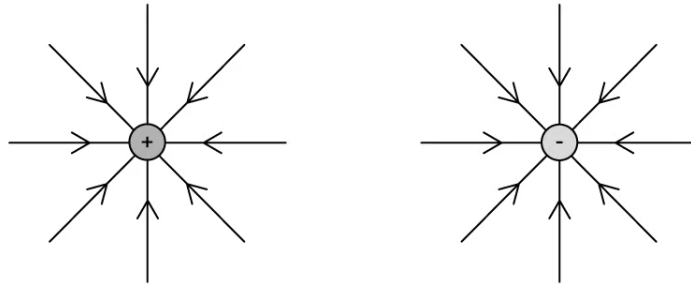
[1 mark]

Question 4

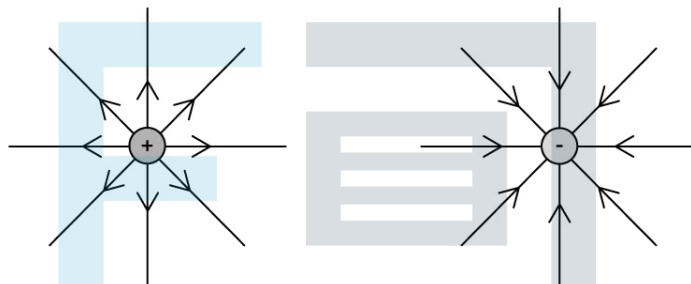
An electric field is a region of space in which an electric charge is subjected to a force. Electric fields can be represented with vector diagrams showing the direction of force around a point charge.

Select the pair of diagrams which correctly represent the field lines around a positive and negative charge.

A.



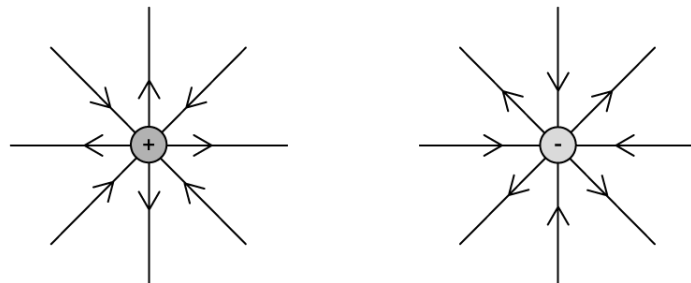
B.



C.



D.



[1 mark]

Question 7

Which statement correctly describes a property of the drift velocity, v .

- A. v is indirectly proportional to current, I
- B. v is directly proportional the to charge carrier density, n
- C. v is directly proportional to current, I
- D. v is directly proportional the to cross-sectional area of the conductor, A

[1 mark]

Question 8

Determine the energy of 4 eV in Joules.

- A. 6.4×10^{-19} J
- B. 6.4×10^{-13} J
- C. 6.4 J
- D. 2.1 J

[1 mark]

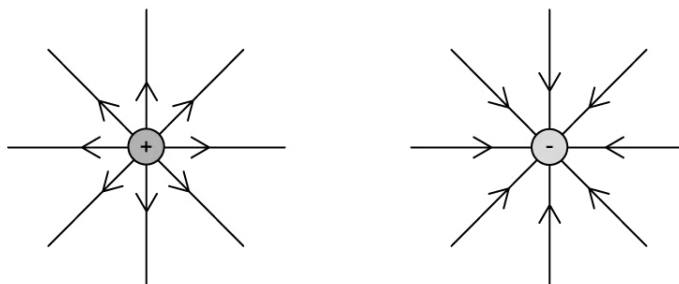
Question 9

Identify the electrical item most likely to use direct current.

- A. Washing machine.
- B. Laptop.
- C. Reading lamp.
- D. Kettle.

[1 mark]

Question 10



For electric field strength, identify the correct equation and description of the diagram.

	Equation	Description
A.	$E = \frac{F}{q}$	The strength of the electric field is proportional to the number of lines per unit cross-sectional area
B.	$E = \frac{F}{q}$	The strength of the electric field is indirectly proportional to the number of lines per unit cross-sectional area
C.	$F = \frac{E}{q}$	The strength of the electric field is proportional to the number of lines per unit cross-sectional area
D.	$F = \frac{E}{q}$	The strength of the electric field is indirectly proportional to the number of lines per unit cross-sectional area

[1 mark]