The Practise Ground

Class 12 Physics

Electrostatics: Coulomb & Fields

Force, field and potential of point charges

1

$$F = k q_1 q_2 / r^2$$

Coulomb's law

$k = 9 \times 10^9$ N m^2/C^2

2

$$E = F / q$$

Electric field

Force per unit positive test charge, in N/C

3

$$E = k q / r^2$$

Field of a point charge

Points away from a positive charge

4

$$V = k q / r$$

Electric potential

Work per unit charge, in volt (V)

q	r	F	E	V
charge	**distance**	**force**	**field**	**potential**
coulomb (C)	metre (m)	newton (N)	N/C	volt (V)

Key ideas

Like charges repel. Unlike charges attract.

Field lines start on positive charges and end on negative charges.

Quick example

Two 1 μC charges are 1 m apart.

$F = 9 \times 10^9 \times (10\text{^-}6)^2 / 1^2$

$F = 0.009$ N

Think you've got it? Test yourself.

Scan for a free Class 12 Physics quiz.

thepractiseground.in

Free for every class. Print and display it anywhere.