

Quiz 1

Answer each question in 3 lines or less (not counting any displayed equations or drawings).

(1) Write down Coulomb's law for electricity, stating what the equation gives you and in what situations it applies, and what each symbol in the equation stands for.

Force between two small charges $\rightarrow F_e = k_e \frac{Q_1 Q_2}{r^2}$

↑ Coulomb's electrostatic unit.

← values of the two charges

← r = distance between the charges

(2) Explain why we experience gravity all the time in our everyday lives while we are not normally aware of the electrostatic force, although the latter is considered to be a much stronger force.

The gravitational force cannot be neutralized.

(3) In microscopic terms what is it that makes conducting materials behave differently from insulators? (Please be specific, but remember to stay within the length limits for your answer.)

In conductors some charge carriers (e^-) can move

(4) The dot represents a small, positive charge $q = 2.0 \times 10^{-6}$ C. Draw a few (6 or more) of the electric field lines produced by this charge.

