



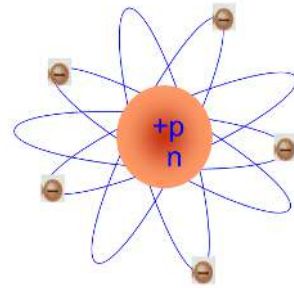
Chapter 21

Coulomb's Law



The charge is quantized

$$q = en$$



q= الشحنة

e= شحنة الالكترون = 1.6×10^{-19}

n= عدد الالكترونات (عدد صحيح فقط)

Q.1 find the number of electrons with charge $11.2\mu\text{c}$

Q.2 find the charge of 8 electrons

Coulomb Law

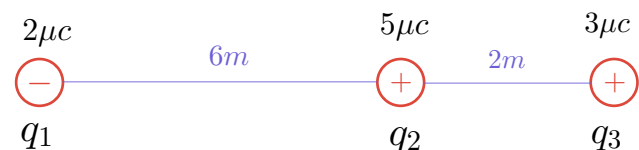
$$F = \frac{kq_1q_2}{r^2}$$

الاشارات غير مهمة

F = القوة
 q = الشحنة
 r = المسافة
 k = 9×10^9 (ثابت)

Q.3 two charges $-8\mu c$ and $4\mu c$ are separated by 5 cm find the force between them

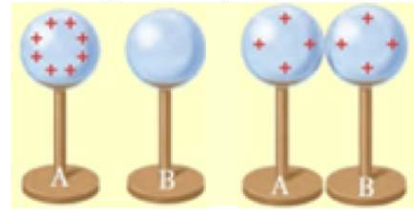
Q.4 according to the figure, find the force acting on q_3



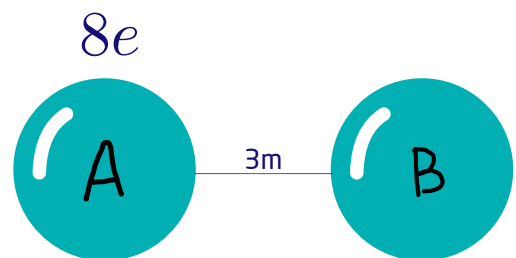
conductivity

If two conducting spheres connected together the charge will be distributed equally

الشحنات تتوزع بالتساوي



Q.5 two conducting sphere A and B are separated by a distance $3m$ has a charge $8e$ while B is neutral. the sphere are connected by a thin conducting wire, find the electrostatic force between them after the wire is removed



القوانين

$$q = en$$

$$F = \frac{kq_1q_2}{r^2}$$

Answers key

Q1. 7×10^{13}

Q2. 1.28×10^{-18}

Q3. 1.15×10^2

Q4. 3.3×10^{-2}

Q5. 4.1×10^{-28}