

Electric Fields

Question Paper

Level	Pre U
Subject	Physics
Exam Board	Cambridge International Examinations
Topic	Electric Fields
Booklet	Question Paper

Time Allowed: 4 minutes

Score: /3

Percentage: /100

Grade Boundaries:

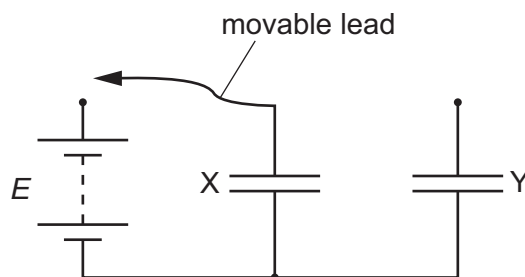
- 1 In a hydrogen atom, the electron is considered to be a distance of 5.3×10^{-11} m from the proton.
What is the size of the electrostatic force on the electron at this distance?

- A 5.1×10^{11} N
- B 27 N
- C 8.2×10^{-8} N
- D 2.7×10^{-21} N

Space for working

- 2 A capacitor X of capacitance C is charged by connecting it, with a movable lead, to a battery of emf E .

The lead is moved so that capacitor X is first disconnected from the battery and then connected to a second capacitor Y of capacitance C .



What is the energy stored in capacitor Y?

- A $\frac{1}{8} CE^2$
- B $\frac{1}{4} CE^2$
- C $\frac{1}{2} CE^2$
- D CE^2

Space for working

- 3 A capacitor discharge circuit of time constant 45ms includes a capacitor and resistor. The capacitor has a capacitance of $18\mu\text{F}$

What is the resistance of the resistor?

A $2.5 \times 10^3 \Omega$

B 2.5Ω

C 0.40Ω

D $4.0 \times 10^{-4} \Omega$

Space for working