

- 4 Two equally-charged ions exert a force of  $4.0 \times 10^{-9} \text{ N}$  on each other. The distance between the centres of the ions is  $2.4 \times 10^{-10} \text{ m}$ .

Which of the following is equal to the charge on each ion?

☐ A  $\sqrt{\frac{4.0 \times 10^{-9} \times (2.4 \times 10^{-10})^2}{8.99 \times 10^9}}$

☐ B  $\sqrt{\frac{4.0 \times 10^{-9} \times (2.4 \times 10^{-10})^2}{4 \times \pi \times 8.85 \times 10^{-12}}}$

☐ C  $\frac{4.0 \times 10^{-9} \times (2.4 \times 10^{-10})^2}{8.99 \times 10^9}$

☐ D  $\frac{4.0 \times 10^{-9} \times (2.4 \times 10^{-10})^2}{4 \times \pi \times 8.85 \times 10^{-12}}$

(Total for Question 4 = 1 mark)