

NCERT/CBSE PHYSICS CLASS 11 textbook

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Answers to NCERT/CBSE PHYSICS Class 12 (Class XI) textbook Exercise and Additional exercise

CHAPTER ONE ELECTRIC CHARGES AND FIELDS

EXERCISES

(For simplicity in numerical calculations, take $g = 10 \text{ m s}^{-2}$)

1.11 A polythene piece rubbed with wool is found to have a negative charge of $3 \times 10^{-7} \text{ C}$.

(a) Estimate the number of electrons transferred (from which to which?)

(b) Is there a transfer of mass from wool to polythene?

1.11 Given

$$q = 3 \times 10^{-7} \text{ C}$$

Key Idea

$$q = ne$$

Solution

$$3 \times 10^{-7} \text{ C} = n(1.6 \times 10^{-19} \text{ C}) \quad n = \frac{3 \times 10^{-7}}{1.6 \times 10^{-19}} = 2 \times 10^{12}$$

Answer

- As polythene has a negative charge it has acquired electrons
- Mass transfer is negligible as mass of electrons is negligible

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