

NCERT SOLUTIONS CLASS-8 MATHS

CHAPTER-12 EXERCISE-12.2

Q.1. Converts the numbers into standard form:

(i) 0.000000000085

(ii) 0.0000000000942

(iii) 602000000000000

(iv) 0.0000000837

(v) 3186000000

Solution:

(i) 0.000000000085

$$0.000000000085 = 0.000000000085 \times \frac{10^{12}}{10^{12}} = 8.5 \times 10^{-12}$$

(ii) 0.0000000000942

$$0.0000000000942 = 0.0000000000942 \times \frac{10^{12}}{10^{12}} = 9.42 \times 10^{-12}$$

(iii) 602000000000000

$$602000000000000 = 602000000000000 \times \frac{10^{15}}{10^{15}} = 6.02 \times 10^{15}$$

(iv) 0.0000000837

$$0.0000000837 = 0.0000000837 \times \frac{10^9}{10^9} = 8.37 \times 10^{-9}$$

(v) 3186000000

$$3186000000 = 3186000000 \times \frac{10^{10}}{10^{10}} = 3.186 \times 10^{10}$$

Q.2. Convert the following numbers in usual form:

(i) 3.02×10^{-6}

(ii) 4.5×10^4

(iii) 3×10^{-8}

(iv) 1.0001×10^9

(v) 5.8×10^{12}

(vi) 3.61492×10^6

Solution:

(i) 3.02×10^{-6}

$$3.02 \times 10^{-6} = \frac{3.02}{10^6} = 0.00000302$$

(ii) 4.5×10^4

$$4.5 \times 10^4 = 4.5 \times 10000 = 45000$$

(iii) 3×10^{-8}

$$3 \times 10^{-8} = \frac{3}{10^8} = 0.00000003$$

(iv) 1.0001×10^9

$$1.0001 \times 10^9 = 1000100000$$

(v) 5.8×10^{12}

$$5.8 \times 10^{12} = 5.8 \times 1000000000000 = 5800000000000$$

(vi) 3.61492×10^6

$$3.61492 \times 10^6 = 3.61492 \times 1000000 = 3614920$$

Q.3. Convert the given numbers in the following statements in standard form:

(i) 1 micron is equal to $\frac{1}{1000000}$ m.

(ii) Charge of an electron is 0.000,000,000,000,000,28 coulomb.

(iii) Size of bacteria is 0.0000005 m.

(iv) Size of a plant cell is 0.00001275 m.

(v) Thickness of a thick paper is 0.07 mm.

Solution:

(i) $1 \text{ micron} = \frac{1}{1000000} = \frac{1}{10^6} = 1 \times 10^{-6} \text{ m}$

(ii) Charge of an electron is 0.00000000000000000028 coulombs.

$$= 0.00000000000000000028 \times \frac{10^{19}}{10^{19}} = 2.8 \times 10^{-19} \text{ coulomb}$$

$$(iii) \text{Size of bacteria} = 0.0000005 = \frac{5}{10000000} = \frac{5}{10^7} = 5 \times 10^{-7} m$$

$$(iv) \text{Size of a plant cell} = 0.00001275 m = 0.00001275 \times \frac{10^5}{10^5} = 1.275 \times 10^{-5} m$$

$$(v) \text{Thickness of a thick paper} = 0.07 mm = \frac{7}{100} mm = \frac{7}{10^2} = 7 \times 10^{-2} mm$$

Q.4. In a stack there are 6 books each of thickness 20 mm and 5 paper sheets each of thickness 0.016 mm. What is the total thickness of the stack?

Solution:

Thickness of one book = 20 mm

Thickness of 6 books = $20 \times 6 = 120 mm$

Thickness of one paper = 0.016 mm

Thickness of 5 papers = $0.016 \times 5 = 0.08 mm$

Total thickness of a stack = $120 + 0.08$

$$= 120.08 mm = 120.08 \times \frac{10^2}{10^2} = 1.2008 \times 10^2 mm$$

