

Unit : 2 "Logarithms"

Exercise 2.1

Q1: Express The following numbers in Scientific notation :

(i) 2000000.

Solution:

$$\begin{aligned} &= 2000000 \\ &= 2 \times 10^6 \end{aligned}$$

(ii) 48900.

Solution:

$$\begin{aligned} &= 48900 \\ &= 4.89 \times 10^4 \end{aligned}$$

(iii) 0.0042

Solution:

$$\begin{aligned} &= 0.0042 \\ &= 4.2 \times 10^{-3} \end{aligned}$$

(iv) 0.0000009

Solution:

$$\begin{aligned} &= 0.0000009 \\ &= 9 \times 10^{-7} \end{aligned}$$

(v) 73×10^3

Solution:

$$\begin{aligned} &= 73 \times 10^3 \\ &= 7.3 \times 10^1 \times 10^3 \\ &= 7.3 \times 10^{1+3} \\ &= 7.3 \times 10^4 \end{aligned}$$

(vi) 0.65×10^2

Solution:

$$\begin{aligned} &= 0.65 \times 10^2 \\ &= 6.5 \times 10^{-1} \times 10^2 \\ &= 6.5 \times 10^{-1+2} \end{aligned}$$

(1)

$$= 6.5 \times 10^1$$

(2)

Q2: Express the following numbers in ordinary notation:

(i) 8.04×10^2

Solution:

$$= 8.04 \times 10^2$$

$$= 804$$

(ii) 3×10^5

Solution:

$$= 3 \times 10^5$$

$$= 300000$$

(iii) 1.5×10^{-2}

Solution:

$$= 1.5 \times 10^{-2}$$

$$= 0.015$$

(iv) 1.77×10^7

Solution:

$$= 1.77 \times 10^7$$

$$= 17700000.$$

(v) 5.5×10^{-6}

Solution:

$$= 5.5 \times 10^{-6}$$

$$= 0.0000055$$

(vi) 4×10^{-5}

Solution:

$$= 4 \times 10^{-5}$$

$$= 0.00004.$$

Q3: The Speed of light is approximately 3×10^8 metres per Second. Express it in Standard form. (3)

Solution:

$$\text{Speed of light} = 3 \times 10^8 \text{ ms}^{-1}$$

$$= 300000000.$$

$$= 3000000000$$

Q4: The Circumference of The Earth at the equator is about 40075000 metres. Express This number in Scientific notation.

Solution:

$$\text{Circumference of Earth} = 40075000 \text{ m}$$

$$= 4.0075 \times 10^7$$

Q5: The diameter of Mars is 6.7779×10^3 Km. Express This number in Standard form.

Solution:

$$\text{Diameter of Mars} = 6.7779 \times 10^3 \text{ Km}$$

$$= 67779 \text{ Km.}$$

Q6: The diameter of Earth is about 1.2756×10^4 km. Express this number in standard form.

Solution:

$$\text{Diameter of Earth} = 1.2756 \times 10^4 \text{ km}$$

$$= 1.2756 \times 10^4 \text{ km}$$

$$= 12756 \text{ km}$$