

② write the following numbers in decimal form:-

(i)  $3.459 \times 10^6$

(ii)  $5.678 \times 10^4$

(iii)  $1.00005 \times 10^{-5}$

(iv)  $2.530009 \times 10^{-7}$

$\Rightarrow$  (i)  $3.459 \times 10^6$

(ii)  $5.678 \times 10^4$

~~$= 3.4590000$~~

$= 56780$

$= 3459000$

(iv)  $2.530009 \times 10^{-7}$

(iii)  $1.00005 \times 10^{-5}$

$= 0.000002530009$

$= 0.0000100005$

③ Represent the following numbers in scientific notation

(i)  $(300000)^2 \times (20000)^4$       (ii)  $(0.000001)^{11} \div (0.005)^3$

(iii)  $\left\{ (0.00003)^6 \times (0.00005)^4 \right\} \div \left\{ (0.009)^3 \times (0.05)^2 \right\}$

$\Rightarrow$  (i)  $(300000)^2 \times (20000)^4$

$= (3 \times 10^5)^2 \times (2 \times 10^4)^4$

$= 9 \times 10^{10} \times 16 \times 10^{16}$

$= 144 \times 10^{(10+16)}$

$= 144 \times 10^{26}$

$= 1.44 \times 10^{28}$

(ii)  $(0.000001)^{11} \div (0.005)^3$

$= (1 \times 10^{-6})^{11} \div (5 \times 10^{-3})^3$

$= \frac{1 \times 10^{-66}}{125 \times 10^{-9}}$

$= \frac{1000 \times 10^{-69}}{125 \times 10^{-9}}$

$= 8 \times 10^{(-69+9)}$

$= 8 \times 10^{-60}$



5) Simplify:

$$(i) (2.75 \times 10^7) + (1.23 \times 10^8)$$

$$(ii) (1.598 \times 10^{17}) - (4.58 \times 10^{15})$$

$$(iii) (1.02 \times 10^{10}) \times (1.20 \times 10^{-3})$$

$$(iv) (8.41 \times 10^4) \div (4.3 \times 10^5)$$

$$\Rightarrow (i) (2.75 \times 10^7) + (1.23 \times 10^8)$$

$$= (0.275 \times 10^8) + (1.23 \times 10^8)$$

$$= (0.275 + 1.23) \times 10^8$$

$$= 1.505 \times 10^8$$

$$(ii) (1.598 \times 10^{17}) - (4.58 \times 10^{15})$$

$$= (1.598 \times 10^{17}) - (0.0458 \times 10^{17})$$

$$= (1.5980 - 0.0458) \times 10^{17}$$

$$= 1.5522 \times 10^{17}$$

$$(iii) (1.02 \times 10^{10}) \times (1.20 \times 10^{-3})$$

$$= 1.02 \times 1.20 \times 10^7$$

$$= 1.2240 \times 10^7$$

$$= 1.224 \times 10^7$$

$$(iv) (8.41 \times 10^4) \div (4.3 \times 10^5)$$

$$= (8.41 \times 10^4) \div (4.3 \times 10^5)$$

$$= \frac{841 \times 10^4 \times 10^0}{43 \times 10^5 \times 10^0}$$

$$= 19.558 \times 10^{-2}$$

$$= 1.9558 \times 10^{-1}$$