MEASUREMENT OF MASS

the main standard unit of mass or weight is **kilogram** which we write in short as **‘kg’**. 1000th part of this kilogram is **gram** which is written in short as **‘g’**.

***Thus****1000 gram = 1 kilogram****and****1 kilogram = 1000 gram*

i.e. **1000 g = 1 kg and 1 kg = 1000 g.**

*This gram (g) is a very small unit of mass.*

We use other units of mass or weight to conveniently measure the mass or weight of materials.



|  |  |
| --- | --- |
| 1/2 of 1 kg   = 500 grams  1/4 of 1 kg   = 250 grams  1/5 of 1 kg   = 200 grams  1/10 of 1 kg = 100 grams   1/20 of 1 kg =   50 grams | or           2 x 500 grams   = 1 kg  or           4 x 250 grams   = 1 kg  or           5 x 200 grams   = 1 kg  or           10 x 100 grams = 1 kg  or           20 x 50 grams  = 1 kg |

**How to convert one unit of mass into another?**

To convert kilograms into grams, we write three zeroes (000) towards the right of the number of kg. (since, 1 kg = 1000 g)

**1. Convert the following into grams:**

**(i)** 28 kg

We know, 1 kg = 1000 g

= (28 × 1000) g

= 28000 g

Therefore, 28 kg = 28000 g

**(ii)** 12 kg 58 g

We know, 1 kg = 1000 g

= (12 × 1000) g + 58 g

= 12000 g + 58 g

= 12058 g

**(iii)** 15 kg 465 g

We know, 1 kg = 1000 g

= (15 × 1000) g + 465 g

= 15000 g + 465 g

= 15465 g

Therefore, 15 kg 465 g = 15465 g

**2. Express the following in kilogram and grams:**

**(i)** 3567 kg

We know 1000 g = 1 kg

First three digits 5, 6 and 7 are taken as grams

= 3 kg 567 g

Therefore, 3567 g = 3 kg 567 g

**(ii)** 45600 g

We know 1000 g = 1 kg

First three digits 6, 0 and 0 are taken as grams and rest 45 as kg

= 45 kg 600 g

Therefore, 45600 g = 45 kg 600 g

**(iii)** 23817 g

We know 1000 g = 1 kg

First three digits 8, 1 and 7 are taken as grams and rest 23 as kg

= 23 kg 817 g

Therefore, 23817 g = 23 kg 817 g