**CHAPTER-5**

**PERCENTAGE**

**What is percentage?**  
Percentage is a fraction or a numerical expression or a ration with 100 assumed as denominator. So we can represent 1 percentage as 1%.

Points to be remember-

* **1 = 100%**
* **1/2 = 50%**
* **1/3 = 33****%**
* **1/4 = 25%**
* **1/5 = 20%**
* **1/6 = 16****%**
* **1/7 = 14****%**
* **1/8 = 12****%**
* **1/9 = 11****%**
* **1/10 = 10%**
* **1/11 = 9****%**
* **1/12 = 8****%**
* **1/13 = 7****%**
* If the price of a commodity increases by R%,then the reduction in consumption as not to increase the expenditure is =**%**
* If the price of a commodity decreases by R%,then the increase in consumption as not to decrease the expenditure is=%**.**
* Let the population of a town be P now and suppose it increases at the rate of R% per annul, then:
* Population after n years = **P (1+R/100)n**
* Population n years ago = ****
* Let the present value of a machine be**P**. Suppose it depreciates at the rate of **R%** per annul, then :
* Value of the machine after**n** years =**P(1-R/100)n**
* Value of the machine**n** years ago = ****
* If**A** is**R%** more than**B**, then**B**is less than**A** by=**%**
* If **A** is**R%** less than**B**, then **B**is more than**A**by= %**.**

**Percentage Type1 Shortcut Tricks**  
**Example:**  
If the difference between 45% of a number and 3/5th of that number is 18. What is the number?  
**Solution:**  
Let the number be a .  
Then a x 45% – a x 3/5 = 18  
a x 45% – a x 60% = 18 ∴( 60% = 3/5 )  
a x 15% =18  
a = 100×18 = 1800/15 = 120

Tricks:  
we know 3/5 = 30%  
45% – 30% = 15 %  
15% = 18 = 120

**Percentage Type2 Shortcut Tricks**  
**Example:**  
Sahil work in shop and his 30% of income is  Rs.1800 .Find the 65% of his income and also find the 1 / 5 of Sahil’sincome.

* **Solution:**30%**= 1800 So,** 65% = 1800 x 65 / 30 = 3900
* **Shortcut Trick:** 1800 x 65 / 30 = 3900.

**Example:**  
Raj spend his money from his saving in different way that is he spends 30% on travel,10% on food,15% on wages and 22% on purchase a bike and after that all expenditure he saved 4600.Find the how much he spent on bike.  
**Solution:** Let the total income of Raj=X.

then total expenditure from income = X x (30%+10%+15%+22%)=>X x 77%

Total savings= X x 23%  
**X = 4600 x 100 / 23 = 20000 and expenditure on Bike = 22% so, 20000 x 22 / 100 = 4400.**

**Shortcut Tricks**  
The total income as 100% so, (100% – 30%+10%+15%+22%) = 77% and now (100% – 77%) = 23%  
**Bike Expenditure is now 4600 x 22 / 23 = 4400.**

**Example:**  
Sanjay got 88 marks in Hindi , 81 marks in Science , 74 marks in Maths , 68 marks in Social Science and 57 marks in History . The maximum marks of each subject are100. How much overall percentage of marks did he get?  
**Solution: Percentage = 368 x 100 / 500 = 73.6**