

## Measures of central Tendency

i) Mathematical Averages:-

a) Arithmetic mean or mean.

b) Geometric mean

c) Harmonic mean

ii) Positional Average:-

a) median

b) mode

iii) Other Averages:-

a) Moving Average

b) Progressive Average

c) Composite Avg.

d) Quadratic Mean.

## Mean ( $\bar{x}$ )

$$(I) \quad \bar{x} = \frac{\sum x}{N}$$

or

$$\bar{x} = \frac{\sum fx}{N}$$

(Direct methods)

$$(II) \quad \bar{x} = A + \frac{\sum u}{N}$$

or

$$\bar{x} = A + \frac{\sum fu}{N}$$

(Short cut method)

where  $A =$  Assumed mean.

$$u = x - A$$

$$(III) \quad \bar{x} = A + \frac{\sum u \times d}{N}$$

or

$$A + \frac{\sum fu \times d}{N}$$

(Step deviation method)

$$u = \frac{x - A}{d}$$

$A =$  Assumed mean

$d =$  change of scale

3. Find the Avg. marks from the marks obtained by 10 students;

6, 9, 10, 12, 18, 19, 23,  
23, 24, 28, 37, 48, 49.

4. Calculate the mean of the following data:-

96, 180, 98, 75, 270, 80, 102,  
100, 94, 75, 200, 610.