1) Formula used for 't' test :

$$t = \frac{M_1 - M_2}{SE_D}$$

$$SE_D = SD\sqrt{\frac{N_1+N_2}{N_1 N_2}}$$

$$SD = \sqrt{\frac{\Sigma x_1^2 + \Sigma x_2^2}{N_1+N_2}}$$

M1 = Mean score of Group 1

M2 = Mean score of Group 2

SE_D = Standard error of the difference between means

N1 = Number of subjects in Group 1

N2 = Number of subjects in Group 2

SD = Combined standard deviation of groups

Σx_1^2 = Sum of the squared deviations around the mean of Group 1.

Σx_2^2 = Sum of the squared deviations around the mean of Group 2.

2) Formula used for 'item total' correlation :

$$r = \frac{N\Sigma XY - \Sigma X . \Sigma Y}{\sqrt{[N.\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

r = Coefficient of correlation

N = Number of subjects

X = Obtained scores on the items

Y = Obtained total scores on the particulars scale

3) Formula used for Decile points :

$$P_p = 1 + \left(\frac{pN - F}{f_p}\right) \times i$$

P = Percentage of the distribution wanted,
e.g. 10%, 20% etc.

l = Exact lower limit of the class interval upon which P_p lies

pN = Part of N to be counted off in order to reach P_p

F = Sum of all scores upon intervals below l.

..2.

fp = Number of scores within the interval upon which P_p falls.

i = Length of the class intervals.

4) Formula used for conversion of Raw scores into standard score :

$$X' = \frac{\sigma'}{\sigma}(X - M) + M'$$

X' = Standard score in new distribution

X = Raw score

M = Mean of Raw Score

M' = Assumed Mean

σ = Standard deviation of Raw scores

σ' = Assumed standard deviation