

MEASURES OF CENTRAL TENDENCY

- 1) The number of children in 25 families of a locality are recorded as follows: 3, 1, 4, 0, 2, 1, 1, 2, 3, 3, 2, 2, 2, 5, 0, 1, 4, 1, 2, 1, 2, 3, 0, 1, 4
The mean number of children per family is:
(A) 2
(B) 4
(C) 3
(D) 5
- 2) If $\bar{x} = \left(\sum_{i=1}^n x_i \ln \right)$, then the value of $\sum_{i=1}^n (x_i - \bar{x})$ is:
(A) 0
(B) $2\bar{x}$
(C) $n\bar{x}$
(D) None of these
- 3) The mean of 12 numbers is 24. If 5 is added in every number, the new mean outstanding:
(A) 25
(B) 29
(C) 84
(D) None of these
- 4) The mean of 5 numbers is 27. If one is excluded, their mean is 25. The excluded number is:
(A) 25
(B) 45
(C) 35
(D) None of these
- 5) If the mean of the set of numbers x_1, x_2, \dots, x_n is \bar{x} , then the mean of the numbers $x_1 + 2i, 1 \leq i \leq n$ is:
(A) $\bar{x} + 2n$
(B) $\bar{x} + n + 1$
(C) $\bar{x} + 2$
(D) $\bar{x} + n$
- 6) The A.M. of n numbers of a series is \bar{X} . If the sum of first $(n-1)$ terms is k , then the n th number is:
(A) $\bar{X} - k$
(B) $n\bar{X} - k$
(C) $\bar{X} - nk$
(D) $n\bar{X} - nk$
- 7) The mean of 68 numbers is 18. If each number is divided by 6, the new mean is:
(A) 4
(B) 18
(C) 3
(D) None of these
- 8) The arithmetic mean of the marks obtained by 10 students of class Y in Mathematics in a certain examination is 30. The marks obtained are 25, 30, 21, 55, 47, 10, 15, x , 45, 35. The value of x is:
(A) 15
(B) 16
(C) 17
(D) None of these
- 9) If a variate X is expressed as a linear function of two variates U and V in the form $X = aU + bV$, then mean \bar{X} of X is:
(A) $a\bar{U} + b\bar{V}$
(B) $\bar{U} + \bar{V}$
(C) $b\bar{U} + a\bar{V}$
(D) None of these
- 10) Mean of 25 observations was found to be 78.6. Later on it was discovered that 96 was misread as 69. The correct mean is:
(A) 79.38
(B) 79.68
(C) 79.48
(D) None of these
- 11) There are 60 students in a class of which 25 are girls. The average weight of 25 girls is 40 kg and that of 35 boys is 53 kg. The mean weight in kg of the entire class is:
(A) 47.59
(B) 47.49
(C) 47.70
(D) None of these
- 12) The weighted A.M. of first n natural numbers whose weights are equal to the corresponding numbers is equal to
(A) $2n + 1$
(B) $(1/2)(2n + 1)$
(C) $(1/3)(2n + 1)$
(D) $2n + 1/6$
- 13) The mean of 30 values was 150. It was detected on rechecking that one value 165 was wrongly copied as 135 for the computation of mean. The correct mean is:
(A) 161
(B) 151
(C) 141

- (D) None of these
- 14) The sum of deviation of a set of values x_1, x_2, \dots, x_n measured from 50 is -10 and the sum of deviation of values from 46 is 70. the values of n and the mean are:
 (A) 20, 49.5
 (B) 20, 49
 (C) 21, 39.5
 (D) None of these
- 15) The arithmetic mean of a set of observations is \bar{X} . If each observation is divided by β and then it is increased by 12, then the mean of the new series is:
 (A) $\frac{\bar{X}}{\beta}$
 (B) $\frac{\bar{X} + 12}{\beta}$
 (C) $\frac{\bar{X} + 12\beta}{\beta}$
 (D) $\beta\bar{X} + 12$
- 16) In a moderately skewed distribution, the values of mean and mode are 10k and 7k respectively. Its median is:
 (A) 6k
 (B) 7k
 (C) 8k
 (D) 9k
- 17) The mean weight per student in a group of 7 students is 55 kg. the individual weights of 6 of them are 52 kg, 58 kg, 55kg, 53 kg, 56 kg and 54 kg. the weight of the other students in kg is:
 (A) 57
 (B) 47
 (C) 56
 (D) None of these
- 18) A person travels 480 miles per day. On the first day his speed is 48 kmph, on the second day it is 40 kmph, and on the third day it is 32 kmph. Find his average speed.
 (A) 38.92
 (B) 40
 (C) $16\sqrt{15}$
 (D) 36.
- 19) A firm readymade garments makes both men's and women's shirts. Its profit average is 6% of sales. Its profit in men's shirts averages 8% of sales; and women's shirts comprise 60% of output. the average profit per sale rupee in women's shirts is:
 (A) 4.6
- (B) 0.0466
 (C) 0.46
 (D) None of these
- 20) If \bar{X}_1 and \bar{X}_2 are the means of two distributions such that \bar{X}_1, \bar{X}_2 and \bar{X} is the mean of the combined distribution, then
 (A) $\bar{X} < \bar{X}_1$
 (B) $\bar{X} > \bar{X}_2$
 (C) $\bar{X} = \frac{\bar{X}_1 + \bar{X}_2}{2}$
 (D) $\bar{X}_1 < \bar{X} < \bar{X}_2$
- 21) An aeroplane travels along four sides of a square with 100 kmph, 200 kmph, 200 kmph and 400 kmph speed. The average speed is:
 (A) 250 kmph
 (B) $200\sqrt{\frac{3}{2}}$ kmph
 (C) 192 kmph
 (D) 300 kmph
- 22) A student obtained 66, 95 and 85 marks respectively in three monthly examination in Mathematics and 90 marks in the final examination. The three monthly examinations are of equal weightage whereas the final examination is weighted twice as much as a monthly examination. His mean marks for Maths is:
 (A) 85.2
 (B) 83.3
 (C) 86.2
 (D) None of these
- 23) If each of n numbers $x_i = i$ is replaced by $(i + 1) x_i$, then the new mean is:
 (A) $\frac{(n+1)(n+2)}{6}$
 (B) $n + 1$
 (C) $\frac{(n+1)(n+2)}{3}$
 (D) None of these
- 24) The average score of 100 students of 3 sections of class X is 55. The average of 32 students is 60. the average score of third section is:
 (A) 55.45
 (B) 54.45
 (C) 65.45
 (D) None of these
- 25) The mean monthly salary paid to 75, employees in a company is Rs. 1420. The mean salary of 25 of them is Rs. 1350 and that of 30 others is Rs. 1425. the mean salary of the remaining is:

- (A) 1200
(B) 1800
(C) Rs. 1500
(D) None of these
- 26) The means of 200 items was 50. Later on, it was discovered that two items were misread as 92 and 8 instead of 192 and 88. the correct mean is:
(A) 50.7
(B) 50.6
(C) 50.8
(D) 50.9
- 27) The mean of the squares of first n natural number is:
(A) $\frac{n(n+1)}{6}$
(B) $\frac{(n+1)(2n+2)}{6}$
(C) $\frac{(n+1)(2n-2)}{6}$
(D) None of these
- 28) The average of first n natural number is
(A) $\frac{(n+1)}{2}$
(B) $\frac{n(n+1)}{2}$
(C) $\frac{(n-1)}{2}$
(D) None of these
- 29) The average score of girls in Class X examination in a school is 73 and that of boys is 71. The average score in Class X examination of the school is 71.8. the percentage of boys in Class X of the school is:
(A) 40%
(B) 60%
(C) 30%
(D) 65%
- 30) The mean age of a combined group of men and women is 25 years. if the mean age of the group of men is 26 and that of the group of women is 21, then the percentage of men and women in the group is:
(A) 60, 40
(B) 80, 20
(C) 20, 80
(D) 40, 60
- 31) The mean height of 20 students is 155 cm. it is discovered later on that while calculating the correct mean, reading 149 cm was wrongly read as 189 cm. the correct mean is:
(A) 151
(B) 163
(C) 153
(D) 163.
- 32) A candidate obtains the following percentages in an examination. English 46%; Mathematics 67%; Sanskrit 72%; economics 58%; Political Science 53%. It is agreed to give double weights to marks in English and mathematics as compared to other subjects. The weighted mean is:
(A) 58.4
(B) 58.43
(C) 58.42
(D) 58.45
- 33) There are two branches of a company, employing 100 and 80 persons respectively. If the arithmetic mean of the monthly salaries paid by the two companies are Rs. 275 and Rs. 225 respectively, the arithmetic mean of the salaries of the employees of the companies as a whole is:
(A) 252.78
(B) 252.70
(C) 253
(D) None of these
- 34) A school has four sections of class X having 40, 35, 45 and 42 students. The mean marks obtained in Mathematics test are 50, 45, 40 and 30 representatively for the four sections. The overall average marks per students is:
(A) 40.76
(B) 46.86
(C) 4.96
(D) 40.66
- 35) The mean of monthly salary of 10 members of a group is Rs. 1445. One more member whose monthly salary is Rs. 1500 has joined the group. The mean of monthly salary of 11 members of the group outstanding:
(A) 1445
(B) 1450
(C) 1500
(D) None of these
- 36) The mean of the series x_1, x_2, \dots, x_n is \bar{X} . if x_2 is replaced by λ , then the new mean is:
(A) $\bar{X} - x_2 + \lambda$
(B) $(\bar{X} - x_2 - \lambda)/n$
(C) $[(n-1)\bar{X} + \lambda]/n$
(D) $[n\bar{X} - x_2 + \lambda]/n$.
- 37) The weighted mean of first n natural numbers whose weights are equal outstanding give by
(A) $(2n+1)/2$

- (B) $(n+1)/2$
(C) $(n-1)/2$
(D) $(2n-1)/n$
- 38) The interest paid Plant and Machinery each of three different sums of money yielding 3%, 4% and 5% simple interest p.a. respectively is ht same. The average yield per cent on the total sum invested is:
(A) 3.38%
(B) 2.38%
(C) 4.38%
(D) None of these
- 39) If two grades of oranges sell @ 10 for Re. 1 and 20 for Re. 1, respectively. The average price per orange, in paise is:
(A) 7.5
(B) 7
(C) 6
(D) 6.7
- 40) A train travels first 300 kilometers at an average rate of 30 k.p.h. and further travels the same distance at an average rate of 40 k.p.h. The average speed over the whole distance is:
(A) 34.29
(B) 33.29
(C) 35.25
(D) 34.25
- 41) If the arithmetic mean of two numbers is 10 and their geometric mean is 8, their Harmonic mean is
(A) 6.2
(B) 6.4
(C) 6.3
(D) 5.4
- 42) A cyclist pedals from his house to his college at a sped of 10 k.p.h. and back from the college to his house at 15 k.p.h. His average speed in K.p.h. is:
(A) 11
(B) 12
(C) 14
(D) 13
- 43) An investor buys Rs. 1200 worth of shares in a company each month. During the first 5 months, he bought the shares at a price of Rs. 10, Rs. 12, Rs. 15, Rs. 20 and Rs. 24 per share. After 5 months the average price paid for the shares in rupees is:
(A) 14.63
(B) 14.43
(C) 14.23
(D) 14.53
- 44) A cyclist covers first three kms at an average speed of 8 k.p.h. Another two km at 3 k.p.h. and the last two km at 2 k.p.h. The average speed for the entire journey in kph is:
(A) 2.43
(B) 3.43
(C) 4.43
(D) None of these
- 45) The points scored by basket-ball team in a series of matches are as follows: 15, 3, 8, 10, 22, 5, 27, 11, 12, 19, 18, 21, 13, 14. Its median is:
(A) 13
(B) 13.4
(C) 13.5
(D) 14.5
- 46) The heights (in cm) of 15 students of class X are: 152, 147, 156, 149, 148, 160, 153, 154, 150, 143, 155, 157, 161, 151, 159. Its median is:
(A) 153
(B) 148
(C) 151
(D) 154
- 47) The algebraic sum of the deviations of 20 observations measured from 30 is 2. therefore, the mean of observations is:
(A) 30.7
(B) 30.1
(C) 29.7
(D) 29.1
- 48) In a family of 7 persons, there are three earning members having monthly incomes of Rs. 1800, Rs. 1400 and Rs. 1000. the average income of a member in the family is:
(A) 500
(B) 600
(C) 700
(D) 800
- 49) The average monthly wages of group of 10 persons is Rs. 1500. One member of the group, whose monthly wage is Rs. 1350, left the group and is replaced by a new member whose monthly wage is Rs. 1200. the new monthly wage is:
(A) 1495
(B) 1485
(C) 1475
(D) 1450
- 50) The mean of 20 observations is 15. on checking, it was found that the two observations were wrongly copies as 3 and 6. if wrong observations are replaced by their correct values 8 and 4, then the correct mean is:
(A) 15.5 (B) 15.3 (C) 15.15 (D) 16

MEASURES OF DISPERSION

- 1) Dispersion measures (D) 18.80
(A) The scatterness of a set of observation
(B) The concentration of a set of observations
(C) Both (A) and (B)
(D) Neither (A) and (B)
- 2) Which one is an absolute measure of dispersion?
(A) Standard Deviation
(B) Mean Deviation
(C) Rang
(D) all these measures
- 3) Which measure of dispersion is based on the absolute deviations only:
(A) Quartile deviation
(B) Mean Variation
(C) Standard deviation
(D) Range
- 4) If x and y are related by $5y = 7x + 9$ and $\sigma_x = 2.5$, then the σ_y is:
(A) 3.5
(B) 3.25
(C) 4.5
(D) 6.5.
- 5) If the range is x is 2, what would be the range of $-3x + 50$?
(A) 2
(B) 6
(C) -6
(D) 44
- 6) If two variables x and y are relate by $2x+3y-7=0$ and the mean and mean deviation about mean of x are 1 and 0.3 respectively, then the coefficient of mean deviation of y about mean is:
(A) -5
(B) 12
(C) 50
(D) 4
- 7) If the relation between x and y is $5y-3x=10$ and the mean deviation about mean for x is 12, then the mean deviation of y about mean is:
(A) 7.20
(B) 6.80
(C) 20
- 8) The value of men deviation about mean for the observations 50, 60, 50, 50, 60, 60, 60, 50, 50, 50, 60, 60, 60, 50 is:
(A) 5
(B) 7
(C) 35
(D) 10
- 9) The mean deviation about mode for the numbers 4/11, 6/11, 8/11, 9/11, 12/11, 8/11 is:
(A) 8/11
(B) 1/6
(C) 6/11
(D) 5/11
- 10) If S.D. of x is 3, what is the variance of $(5-2x)$?
(A) 36
(B) 6
(C) 1
(D) 9
- 11) For any two numbers SD is always
(A) Twice the Range
(B) Half of the Range
(C) Square of the Range
(D) NOT
- 12) If the SD of 1^{st} n natural numbers is 14 then the value of n must be
(A) 9 (B) 13
(C) 2 (D) NOT
- 13) If μ is mean of a distribution, then $\sum f_i(y_i - \mu)$ is:
(A) 0
(B) M.D.
(C) S.D.
(D) None of these
- 14) The Coefficient of variance of 10, 10, 10 and 10 will be
(A) 0 % (B) 1%
(C) 10% (D) 100%
- 15) The variance of first 49 natural Numbers is
(A) 12.25 (B) 14.142
(C) 20.0 (D) NOT

- 16) X and Y are so related that $3x+4y=27$ and mean deviation About mean of x is 4.10 find mean Deviation mean in respect of y
(A) 3.07 (B) 3.01
(C) 3.71 (D) 2.98
- 17) If X and Y are so related that $2x+2y=20$ and range of $x=10$ find Range of y
(A) 20 (B) 18
(C) 19 (D) 21
- 18) What is the standard deviation of the data 18,10,12,20 15
(A) 3.95 (B) 3.68
(C) 4.12 (D) 4.09
- 18) Find the mean deviation of the Series 4,6,8,10,12
(A) 2.4 (B) 3.6
(C) 2.2 (D) 9
- 19) For a frequency distribution, standard deviation is computed by applying the formula
(A) $\sigma = \sqrt{\frac{\sum fd^2}{\sum f} - \left(\frac{\sum fd}{\sum f}\right)^2}$
(B) $\sigma = \sqrt{\frac{\sum fd}{\sum f^2} - \frac{\sum fd^2}{\sum f}}$
(C) $\sigma = \sqrt{\frac{\sum fd^2}{\sum f} - \frac{\sum fd}{\sum f}}$
(D) NOT
- 20) If the standard deviation of 1, 2, 3, 4, ..., 10 is σ , then the standard deviation of 11, 12, 13, 14, 20 is
(A) 10σ
(B) $10+\sigma$
(C) σ
(D) NOT
- 21) If the mean deviation of a distribution is 20.20, the standard deviation of the distribution is:
(A) 12.15
(B) 25.25
(C) 20.20
(D) NOT
- 22) Average wages of workers of a factory are Rs. 550.00 per month and the standard deviation of wages is 110. The coefficient of variation is:
(A) C.V. = 20%
(B) C.V. = 15%
(C) C.V. = 35%
(D) C.V. = 25%
- 23) The variance of α , β , and γ is 9, then variance of 5α , 5β and 5γ is:
(A) 45
(B) 9/5
(C) 225
(D) none
- 24) Suppose values taken by a variable X are such that $a \leq x_i \leq b$, where x_i denote the value of X in the i th case for $i = 1, 2, \dots, n$. Then.
(A) $a \leq \text{var}(X) \leq b$
(B) $a^2 \leq \text{var}(X) \leq b^2$
(C) $\frac{a^2}{4} \leq \text{var}(X)$
(D) $(b-a)^2 \geq \text{var}(X)$
- 25) The mean and S.D. for group of 100 observations are 65 and 7.03 respectively. If 60 of these observations have mean and S.D. as 70 and 3 respectively, what is the S.D. for the group comprising 40 observation?
(A) 16.03
(B) 25.03
(C) 4.03
(D) 2.03
- 26) For a set of 100 observation, taking assumed mean as 4, the sum of the deviation is -11cm , and the sum of the squares of these deviations is 257 cm^2 . the coefficient of variation is:
(A) 41.13%
(B) 40.13%
(C) 42.13%
(D) NOT
- 27) if R_x and R_y denote ranges of x and y respectively where x and y are related by $3x + 2y + 10 = 0$, what would be the relation between R_x and R_y ?
(A) $R_x = R_y$
(B) $2R_x = 3R_y$
(C) $3R_x = 2R_y$
(D) $R_x = 2R_y$

- 28) If the minimum value in a set is 9 and its range is 57, the maximum value of the set is:
(A) 33
(B) 66
(C) 48
(D) None of these
- 29) If the observations recorded on five sampled items are 3, 4, 5, 6, 7 the sample variance is:
(A) 4
(B) 0
(C) 2
(D) 2.5
- 30) Mean deviation is minimum when deviations are taken from:
(A) Mean
(B) Median
(C) Mode
Zero.
- 31) If the S.D. of a, b, c , is σ , find the S.D. of $b + c, c + a, a + b$.
(A) $\frac{\sigma}{3}$
(B) σ
(C) $\frac{\sigma}{2}$
(D) 2σ
- 32) The mean and S.D. of 1, 2, 3, 4, 5, 6 is:
(A) $7/2, \sqrt{35/12}$
(B) 3, 3
(C) $7/2, \sqrt{3}$
(D) 3, 35/12
- 33) Let x_1, x_2, \dots, x_n be n observations such that $\sum x_i^2 = 400$ and $\sum x_i = 80$. then a possible value of n among the following is:
(A) 15
(B) 18
(C) 9
(D) 12.
- 34) Suppose a population A has 100 observations 101, 102, 103, ..., 200 and another population B has 100 observations 151, 152, 153, ..., If V_A and V_B represent the variance of the two populations respectively, then $V_A / V_B =$
(A) 4/9
(B) 9/4
(C) 2/3
(D) 1.
- 35) The mean of 5 observations is 4.4 and their variance is 8.24. if three observations are 1, 2 and 6, the other two observations are:
(A) 4 and 8
(B) 4 and 9
(C) 5 and 7
(D) 5 and 9.
- 36) The S.D. of 15 items is 7.9 and if each item is decreased by 1, then standard deviation will be:
(A) 5
(B) 7
(C) 91/15
(D) 7.9
- 37) If two variables x and y are relate by $2x+3y-7=0$ and the mean and mean deviation about mean of x are 1 and 0.3 respectively, then the coefficient of mean deviation of y about mean is:
(A) -5
(B) 12
(C) 50
(D) 4.
- 38) If x and y are related by $y=2x+5$ and the S.D. and A.M. of x are known to be 5 and 10 respectively, then the coefficient of variation of y is:
(A) 25
(B) 30
(C) 40
(D) 20.
- 39) If the mean and S.D. of x are a and b respectively, then the S.D. of $\frac{x-a}{b}$ is
(A) -1
(B) 1
(C) ab
(D) a/b
- 40) When the variance for a set of data equals 0, then
(A) Half the numbers will lie above the mean and half below.
(B) The mean will always be 0.
(C) All numbers in the date set will be the same.
(D) The data will be widely dispersed around the mean.