DEEP SCHOOL OF ECONOMICS

Assignment (STATISTICS - 1)

1. Measures of central tendency for a given set of observations measures
   a. The scatterness of the observations
   b. The central location of the observations
   c. Both (a) and (b)
   d. None of these.
2. For open-end classification, which of the following is the best measure of central tendency?
   a. AM b. GM
   c. Median d. Mode
3. The presence of extreme observations does not affect
   a. AM b. Median
   c. Mode d. Any of these.
4. In case of an even number of observations which of the following is median?
   a. Any of the two middle-most value
   b. The simple average of these two middle values
   c. The weighted average of these two middle values
   d. Any of these
5. Which one of the following is not uniquely defined?
   a. Mean b. Median
   c. Mode d. All of these
6. For a moderately skewed deistribution, which of the following relationship holds?
   a. Mean - Mode = 3 (Mean - Median)
   b. Median - Mode = 3 (Mean - Median)
   c. Mean - Median = 3 (Mean - Mode)
   d. Mean - Median = 3 (Median - Mode)
7. Which of the following results hold for a set of distinct positive observations?
   a. AM $\geq$ GM $\geq$ HM
   b. HM $\geq$ GM $\geq$ AM
   c. AM > GM > HM
   d. GM > AM > HM
8. Quartiles are the values dividing a given set of observations into
   a. Two equal parts
   b. Four equal parts
   c. Five equal part
   d. None of these
9. Which of the following measure(s) possesses (Possess) mathematical properties?
   a. AM b. GM
   c. HM d. All of these
10. Which of the following measures of central tendency is based on only fifty percent of the central values?
    a. Mean b. Median
    c. Mode d. Both (a) and (b)
11. If there are 3 observation 15, 20, 25 then the sum of deviation of the observation from their AM is
    a. 0 b. 5
    c. -5 d. None of these
12. What is the modal value for the numbers 5, 8, 6, 4, 10, 15, 18, 10?
    a. 18 b. 10
    c. 14 d. None of these
13. If the AM and GM for two numbers are 6.50 and 6 respectively then two numbers are
    a. 6 and 7 b. 9 and 4
    c. 10 and 3 d. 8 and 5
14. If the AM and HM for two numbers are 5 and 3.2 respectively then the GM will be
    a. 16.00 b. 4.10
    c. 4.05 d. 4.00
15. What is the value of the fist quartile for observations 15, 18, 10, 20, 23, 28, 12, 16?
    a. 17 b. 16
    c. 12.75 d. 12
16. The third decile for the numbers 15, 10, 20, 25, 18, 11, 9, 12, is
    a. 13 b. 10.70
    c. 11 d. 11.50
17. If there are two groups containing 30 and 20 observations and having 50 and 60 as artithmetic means, then the combined arithmetic mean is
    a. 55 b. 56
    c. 54 d. 52
18. If there are two groups with 75 and 65 as harmonic means and containing 15 and 13

observation then the combined HM is given by

a. 65 b. 70.36
c. 70 d. 71

19. What is the HM of . 1, 1/2, 1/3,..... 1/n?
a. n b. $2n$
c. $\frac{2}{(n+1)}$ d. $\frac{n(n+1)}{2}$

20. If a variable assumes the values 1, 2, 3.....5 with frequencies as 1, 2, 3.....5, then what is the AM?
a. $\frac{11}{3}$ b. 5
c. 4 d. 4.50

21. Two variables x and y are given by y = 2x - 3. If the median of x is 20, what is the median of y?
a. 20 b. 40
c. 37 d. 35

22. If x and y are related by x - y - 10 = 0 and mode of x is known to be 23, then the mode of y is
a. 20 b. 13
c. 3 d. 23

23. If x and y are related by x - y - 10 = 0 and mean of x is known to be 23, then the mean of y is
a. 20 b. 13
c. 3 d. 23

24. If the AM and GM for 10 observations are both 15, then the value of HM is
a. Less than 15
b. More than 15
c. 15
d. Can not be determined.

25. In a symmetric distribution
a. mean = median = mode
b. mean > median < mode
c. mean > median > mode
d. mean < medain < mode

26. If modal value is not clear in a distribution, it can be ascertained by the method of
a. grouping
b. guessing
c. summarizing
d. trial and error

27. The middle value of an ordered series is called :
a. 2nd quartile
b. 5th decile
c. 50th percentile
d. all the above

28. For percentiles, the total number of partition values are
a. 10 b. 59
c. 100 d. 99

29. The first quartile divides a frequency destribution in the ration
a. 4 : 1 b. 1 : 4
c. 3 : 1 d. 1 : 3

30. Median can be located graphically with the help of
a. Histogram
b. ogives
c. bar diagram
d. scatter diagram

31. Sixth deciles is same as
a. median
b. 50the percentile
c. 60th percentile
d. first quartile

32. What percentage of values lies between 5th and 25th percentiles?
a. 5% b. 20%
c. 30% d. 75%

33. Which of the following statements is correct?
a. Two distributions may have identical measures of central tendency and dispersion.
b. Two distributions may have the identical measures of central tendency but different measures of dispersion.
c. Two distributions may have the different measures of central tendency but identical measures of dispersion.
d. All the statments (a), (b) and (c).

34. Dispersion measures
a. The scatternmess of a set of observations
b. The concentration of a set of observations

c. Both (a) and (b)
d. Neither (a) and (b).

35. When it comes to comparing two or more distributions we consider
a. Absolute measures of disperstion
b. Relative measures of dispersion
c. Both (a) and (b)
d. Either (a) or (b).

36. Which measure of dispersion is the quickest to compute?
a. Standard deviaiton
b. Quartile deviaiton
c. Mean deviation
d. Rnage

37. Which measures of dispersions is not affected by the presence of extreme observations?
a. Range
b. Mean deviaiton
c. Standard deviaiton
d. Quartile deviaiton

38. Which measure of dispersion is based on the absolute deviaitons only?
a. Standard deviaiton
b. Mean deviaiton
c. Quartile deviaiton
d. Range

39. Which measure of dispersion is based on all the observations?
a. Mean deviaiton
b. Standard deviation
c. Quartile deviaition
d. (a) and (b) but not (c)

40. The appropriate measure of dispersions for open - end classification is
a. Standard deviation
b. Mean deviation
c. Quartile deviation
d. All these measures

41. The most commonly used measure of dispersion is
a. Range
b. Standard deviation
c. Coefficient of variation
d. Quartile deviation.

42. A shift of origin has no impact on
a. Range
b. Mean deviaiton
c. Standard deviation
d. All these and quartile deviation.

43. The standard deviation of, 10, 16, 10, 16, 10, 10, 16, 16 is
a. 4 b. 6
c. 3 d. 0

44. For any two numbers SD is always
a. Twice the range
b. Half of the range
c. Square of the range
d. None of these.

45. If all the observations are increased by 10, then
a. SD would be increased by 10
b. Mean deviation would be increased by 10
c. Quartile deviation would be increased by 10
d. All these three remain unchanged.

46. If all the observations are multiplied by 2, then
a. New SD would be also multiplied by 2
b. New SD would be half of the previous SD
c. New SD would be increased by 2
d. New SD would be decreased by 2

47. If Rx and Ry denote ranges of x and y respectively where x and y are related by $3x + 2y + 10 = 0$,
what would be the relation between x and y?
a. $Rx = Ry$
b. $2\,Rx = 3\,Ry$
c. $3\,Rx = 2\,Ry$
d. $Rx = 2\,Ry$

48. If the range of x is 2, what would be the range of $-3x + 50$?
a. 2 b. 6
c. -6 d. 44

49. The coefficient of mean deviaiton about mean for the first 9 natural numbers is
a. 2/9 b. 80
c. 4/9 d. 50

50. If the relation between x and y is $5y - 3x = 10$ and the mean deviaiton about mean for x is 12, then the mean deviation of y about mean is
    a. 7.20 b. 6.80
    c. 20 d. 18.80
51. If the mean and SD of x are a and b respectively, then the SD of $\frac{x - a}{b}$ is
    a. -1 b. 1
    c. ab d. a/b.
52. If the SD of x is 3, what us the variance of $(5 - 2x)$?
    a. 36 b. 6
    c. 1 d. 9
53. If x and y are related by $2x + 3y + 4 = 0$ and SD of x is 6, then SD of y is
    a. 22 b. 4
    c. 5 d. 9
54. If x and y are related as $3x + 4y = 20$ and the quartile deviaiton of x is 12, then the quartile deviation of y is
    a. 16 b. 14
    c. 10 d. 9
55. If the SD of the 1st n natural numbers is 2, then the value of n must be
    a. 2 b. 7
    c. 6 d. 5
56. The normal curve is _____
    a. Bell-shaped
    b. U-shaped
    c. J-shaped
    d. Inverted J-shaped
57. For a negatively skewed distribution, the correct inequality is
    a. Mode < median
    b. Mean < median
    c. mean < mode
    d. None of the above
58. In case of positive skewed distribution, the extreme values lie in the
    a. Left tail b. right tail
    c. Middle d. any where
59. If $\overline{X}$ = 50, mode = 48, σ = 20, the coefficient of skewness shall be =
    a. 0.4 b. 0.1
    c. 0.3 d. None of these
60. If $\beta_2 = 3$ the distribution is called -
    a. Mesokurtic
    b. Leptokurtic
    c. Pletykurtic
    d. None of these
61. The right-hand tail of a frequency distribution is found to the mirror image of the left-hand tail. The distribution is
    a. positively skewed
    b. negatively skewed
    c. asymmetric
    d. symmetric
62. When coefficient of of skewness is zero the distribution is
    a. J-shaped
    b. Ushaped
    c. symmetrical
    d. L-shaped
63. When $\beta_2 < 3$ the distribution is
    a. Leptokurtic
    b. Platokurtic
    c. Mesokurtic
    d. None of these
64. In a negatively skewed distribution
    a. Mode > Median > Mean
    b. Median > Mode > Mean
    c. Mode < Median < Mean
    d. None of these
65. Karl Pearson's coefficient of skewness is... Bowley's coefficient of skewness for any skewed distribution.
    a. equal to
    b. less than
    c. greater than
    d. not related to
66. When coefficient of skewness is negative
    a. $Q_2 + Q_3 = 2Q_1$
    b. $Q_3 + Q_1 < 2Q_2$
    c. $Q_3 + Q_1 > 2Q_2$
    d. $Q_3 + Q_2 < 2Q_1$

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