1. Which one of the following statements is incorrect?

a) The value that is more frequent is called mode.

b) It is possible to have more than one mode.

c) It is possible to have no mode.

d) If there is no mode, it is represented by writing ° (zero).

2. Mean, median and mode of 4,6 and 5 will be:

a) 5,5 and 5

b) 5,6 and °

c) 5,6 and no mode

d) 5,6 and 3

3. The total deviation of all data toward the arithmetic mean is:

a) Always zero

b) 1

c) Always more than 1

d) 0, 1 or more than 2

4. Consider the following statements:

a) It is not possible to determine the value of mode graphically

b) Mode is affected by extremely large or small items

c) Mode can be used to describe qualitative phenomenon

d) For the determination of mode, only the values occurring with high frequencies are required to be known

The correct statements are:

a) All of these

b) A,BandC

c) BandC

d) CandD

5. Which one of the following is correct?

a) Mode - median = 2 (median - mean)

b) Mode - median = 3(median - mean)

c) Both (a) and (b)

d) None

6. According to null hypothesis, the difference in means of two sets of observations theoretically should be:

a) Zero

b) Not zero

c) 1

d) More than I

7. Match column I with column IT and select the correct answer using answer codes:

Column I	Column II
(A) Combined mean	1. n...$JX_{I}.x_2 \cdot X_3 \cdot X_4 \cdots \cdots \bullet$.••• Xn
(B) Arithmetic mean	2. _N __ *L (NIX)*
(C) Harmonic mean	3. $\frac{NIX_I + N_2X_2}{NI + N2}$
(D) Geometric mean	4. *LX* /r:r-

Answer codes:

	A	B	C	D
a)	4	3	2	I
b)	3	1	4	2
c)	3	4	2	1
d)	2	3	4	1

8. Median is suitable for expressing data on:

a) Health

b) Colour

c) Intelligence

d) All of these

9. The geometric mean of 2 and 8 is:

a) 0

b) 2

c) 16

d) None of these

10. The harmonic mean of 3,4 and 5 is:

a) 4

b) 3

c) 0.038

d) 60

11. The median of the observations 2, 4, 4, 5, 6, 6, 6, is:

a) 002

b) 4

c) 5

d) 6

12. The median in the even integer is calculated by the formula:

a) *nl}h* observation

b) Value of (n+1 \th observation in the arrangement of observations in increasing order

c) Value of *"⁄₂* th observation + value of *("⁄₂* + 1)th observation

d) *"⁄₂* th observation - value of *(n/2* + l)th observation

13. Consider the following statements:

a) The mean and median are both measures of central tendency

b) The mean and median are the same for symmetric distribution

c) For positively skewed distributions, generally the mean will be less than the median

d) For positively skewed distributions, the mean is higher than the medium

The correct statements are:

a) All

b) (A), (B) and (C)

c) (A) and (B)

d) (C) and (D)

14. What is the median value of 3,4,2,5,7, 8?

a) 2

b) 2.5

c) 3.5

d) 5

15. In which one of the following may there be more than one answer?

a) Mode

b) Median

c) Mean

d) None of these

16. Calculate the median of the data 34, 36, 38,40,42, 46, 48, 50:

a) 40

b) 41

c) 42

d) 41.75

17. The t-test is a basic test that is limited to:

a) One group

b) Two groups

c) Both (a) and (b)

d) Multiple groups

18. T-test is used when:

a) The sample is in large size and standard deviation is unknown

b) The sample is in small size and standard deviation is unknown

c) The standard deviation is known and the sample is in large size

d) The standard deviation is known and the sample is in small size

19. The t-test to know the significance of difference of means of two samples was applied by:

a) W S Gosset (1908)

b) A R Fisher (1870)

c) M Fisher (1936)

d) Kari Pearson (1902)

20. Paired t-test is calculated by the formula:

a) t = X . *N/S.D*

b) t = *X."N/S.D*

c) t = *X.SDIN*

d) t = "N x *S.DI* X

21. William Gosset published his Hest work in 1908 in:

a) Statistical Science

b) Biometrika

c) The American Statistician

d) American Naturalist

22. Student Hest is one of the most commonly used techniques for testing a hypothesis on the basis of:

a) A difference between sample means

b) A difference between sample standard deviation

c) A difference between observed and expected frequencies

d) All of these

23. Consider the following statements:

a) Student t-test difference of means is used for smaller samples

b) Student t-test of difference of means can be used to compare the sample means between two independent samples

c) Student t-test of difference of means can be used to compare the sample means between two dependent samples

d) Student t-test of difference of means is a parametric test which does not assumes a normal distribution

The correct statements are:

a) All of these

b) A, Band C

c) Band C

d) A and D

24. The t-test can be done knowing just the:

a) Number of data points

b) Means

c) Standard deviation

d) All of these

25. If the p-value associated with the Hest is not small (>0.05), there is evidence that:

a) The means are significantly different

b) The means are not different.

c) There is evidence to reject null hypothesis.

d) None of the above

26. A paired test is generally used:

a) To test the hypothesis that two populations

b) When the two samples are dependent have the same mean

c) To test the hypothesis that two populations

d) All of these have the same mean

27. Student t-test of difference of means is used when the sample size is less than:

a) 10

b) 20

c) 30

d) 50

28. The shape of the student t-distribution is determined by the:

a) Degree of freedom

b) Mean

c) Number of observation

d) Standard error

29. In paired t-test, the degree of freedom (df) is:

a) N-I

b) N-2

c) NI + N2 +2

d) NI + N_2-2

30. Chi-square test was developed by:

a) Fisher

b) Karl Pearson

c) Gosset

d) Garret

31. For a contingency table, 2 x 2 table, the degree of freedom is:

a) V=(C-I)+(r-I)

b) V=(C-I)/(r-I)

c) V=(C-I)x(r-I)

d) V=(C-I)/(r-I)

32. Which one of the following formula is used to calculate chi-square value?

a) X^2=L(0-E?

E

b) X2= L(0+E)2

E

c) X2 = L(0-E)2

O+E

d) X2= {.r(0 *iE)2}*

33. Which one of the following statements is incorrect?

a. The F distribution is a ratio of two chi-square distributions

b. F distribution is right skewed distribution.

c. F distribution is used most commonly in analysis of variance.

d. None of the above.

34. Expected frequency is calculated by the formula:

(a) E = Grand Total / Column total x Row total

(b) E - ---=:-----:-----„------- Column total x Row total - Grand total

(c) E = Column total + Row total / Grand

(d) E = Column total - Row total / Grand total

35. Karl Pearson's coefficient of skewness is calculated by the formula:

a. SK = Mean + Mode / Standard deviation

(b) SK = Mean-Mode / Standard deviation

(c) SK= Mean x Mode / Standard deviation

(d) SK= ----- Mean-Mode / Standard deviation

36. Skewness is used to find out:

a. Deviation

b. Mean

c. Mode

d. Medium

37. If the value of mean is greater than the mode, the skewness will be:

a. Positive

b. Negative

c. May be positive or negative

d. Zero

38. Normal distribution was discovered by:

a. De moivre

b. La Place

c. Fisher

d. Bliss

39. Lorenz curve is a graphic method of studying:

a. Mean

b. Mode

c. Dispersion

d. Standard deviation

40. Which one of the following tests may be evaluated against the chi-square distribution?

a. Student t-test

b. G-test

c. Wald test

d. None of these

41. Which one of the following is an incorrect match?

a. Coefficient of variation - Karl Pearson

b. Mean deviation – Bliss

c. Loren curve - Max 0 Lorenz

d. Standard deviation - Karl Pears on

42. Which one of the following is needed for the chi-square test?

a. Data should be qualitative.

b. Sample must be random.

c. Observed frequency should not less than 5.

d. All of these

43. For 4'3 contingent table, the degree of freedom is:

a. 2

b. 4

c. 6

d. 8

44. The chi-square test of independence is used for:

a. One variable

b. Two variables

c. More than two variables

d. All of these

45. The chi-square test is not suitable for:

a. Frequency within any phenotypic class less than 5

b. Each expected frequency is between five and 10

c. Where there are only two classes

d. All of the above

46. In chi-square test, Yates' correction is needed particularly where there are:

a. No phenotypic classes

b. Phenotypic classes

c. Two phenotypic classes

d. None of these

47. Yates' correction for continuity is needed:

a. Where there are two phenotypic classes

b. In small samples, where the numbers of individuals expected in each class is between 5 and 10

c. Where the sample is small

d. All of these

48. The chi-square test can be applied to discrete distribution such as the:

a. Poisson

b. Binomial

c. Both (a) and (b)

d. None of these

49. Generally, a probability of is considered to be a significant difference:

a. 0.1

b. 0.05

c. 0.05 or less

d. 0.5

50. For independence assortment, attention is giving on figures on the Chi-square table:

a. O.Q] and 0.05

b. 0.01 and 0.001

c. 0.95 and 0.99

d. 0.05

51. For goodness of fit, attention is given on figure in the chi-square table:

a. 0.05

b. 0.01

c. 0.001

d. All of these

52. Chi-square (X2) test of goodness of fit test and test for independence of attributes depend only on the:

a. Set of observed frequencies

b. Set of observed and expected frequencies

c. Degrees of freedom

d. All of these

53. Standard deviation can be determined by taking of the variance:

a. Dividing it by number of observations

b. Square root

c. By multiplying it to number of observations

d. None of the above

54. A standard deviation of data set equal to zero manifests that all values in the set are:

a. Same

b. Different

c. May be the same or different

d. Generally different but rarely the same.

55. Alve M Tuttle is related with:

a. Mode

b. Mean

c. Median

d. Range

56. The variability of a statistic is measured by its:

a. Range

b. Median

c. Mode

d. Standard deviation

57. With an increase in sample size, the standard deviation will:

a. Fluctuate

b. Consistently increase

c. Consistently decrease

d. Both (b) and (c)

58. The higher the probability, the more likely it is that the two sets are:

a. Different

b. Same

c. Same and that any differences are just due to random chance

d. Different and that any similarities are just due to random chance

59. Which one of the following tests is the most important and most used members of the non parametric family:

a. X2 test

b. Student's t-test

c. Z-test

d. F-test

60. The unpaired test should not be used when there is a significant difference between of two samples:

a. Means

b. Standard deviation

c. Variances

d. None of the above

61. Consider the following statements about Pearson's correlation coefficient:

a. r only measures the strength of a linear relationship

b. r is always between + 1 and-I

c. r changes if the independent and dependent variables interchanged

d. r changes if the scale on either variable is changed

The correct statements are:

a. All of the above

b. A, B and C

c. A and B

d. B and D

62. Which one of the following statements is incorrect?

a. Use of chi-square is inappropriate if any expected frequency is below 1.

b. Use of chi-square test is inappropriate if the expected frequency is less than 5 in more than 20 per cent cells.

c. In 2 x 2 contingency table of chi-square test of independent, expected frequencies less than 5 are generally considered acceptable if the Yates'correction is used.

d. None of the above

63. Consider the following statements about data used in a chi-square analysis:

a. Randomly drawn from the population

b. Measured variables must be dependent

c. Observed frequencies should be small

d. Values of independent and dependent variables should not be mutually exclusive.

The correct statements are:

a. A, B and C

b. B, C and D

c. Band D

d. None of these

64. Which one of the following may be more suitable for describing exponential growth?

a. Arithmetic mean

b. Geometric mean

c. Simple harmonic mean

d. Quadratic mean

65. The term 'multiple regression' was given by:

a. Gossett (1908)

b. Pearson (1908)

c. Mood (1950)

d. Yates (1910)