

UNIVERSITY OF CALICUT
SCHOOL OF DISTANCE EDUCATION

III SEMESTER

B.A ECONOMICS
(2013 ADMISSION)

CORE COURSE

Quantitative Methods for Economic Analysis - 1
(EC3 B03)

1. The following integers were obtained as the number of visits to a gift shop, per hour, over several days.

0, 2, 3, 1, 2, 4, 5, 2, 3, 4,
2, 3, 3, 5, 6, 2, 1, 4, 1, 4,
3, 1, 6, 2, 1, 4, 5, 2, 3, 3,
1, 2.

the mean of the above data, to 2 decimal places.

- a) 2.80
- b) 3.00
- c) 2.81
- d) 2.8

2. Age is classified as

- a) nominal data
- b) ordinal data
- c) interval data
- d) ratio data

3. You are conducting a survey of the people of India to find out how popular football is among the Indians. You randomly choose people to call, and make 1,000 phone calls to people scattered across the country. In this study, what of the following statement is true

- a) Both the people of India and the people you called is the population
- b) The people of India is called the population, and the people you called are the sample.
- c) The people of India is the sample, and the people you called is the population.
- d) Both the people of India and the people you called are samples.

4. A _____ refers to the group in your study whereas a _____ refers to a distinct group of people

- a) population; sample
- b) sample; population
- c) sample; cohort
- d) participant; population

5. Under what circumstances should we be cautious about using the mean as a measure of central tendency?

- a) When the data is skewed.
- b) When data is positively skewed
- c) When data is negatively skewed
- d) All of the above

6. If $b = 0$ the line of best fit will conventionally be drawn _____

- a) as horizontal
- b) as vertical
- c) as provides the best fit to the scores
- d) through the middle of the data points

7. Linear regression can achieve which of the following

- a) Allow us to predict someone's statistical grade from their mathematical ability
- b) Allow us to identify how much variable y will change if variable x changes
- c) Allow us to predict that as the weather gets 30% colder, then the sales of sweaters will increase by 50%.
- d) All of the above

8. Linear regression means that every time the value of x increases, y changes by a _____ amount.

- a) increasing
- b) decreasing
- c) constant
- d) all of the above

9. In regression, the variable being predicted is called the

- a) criterion or y variable
- b) predictor variable or x
- c) x
- d) explanatory variable

10. Which of the following is incorrect

- a) In linear regression a real line is drawn through the data points where total error is minimized.
- b) In linear regression the line tells us by how much y is predicted to change as a result of a change in x .
- c) In linear regression the line fits the data in the best place possible.
- d) In linear regression the line of best fit maximises the distance between the scores and the regression line.

11. A correlation coefficient of +0.40 could be considered
- a) weak
 - b) moderate
 - c) strong
 - d) zero
12. The _____ coefficient (r) is a ratio between the covariance (variance shared by two variables) and a measure of the separate variances.
- a) regression
 - b) elasticity
 - c) correlation
 - d) mean
13. In correlation, for a positive relationship _____ scores on one variable tend to be associated with _____ scores on the other variable
- a) high; low
 - b) low; high
 - c) high; high
 - d) none of the above
14. To construct a _____ we take each person's score on x and y and plot where they meet. Each data point represents two scores.
- a) scatter diagram
 - b) histogram
 - c) pie diagram
 - d) ogive
15. When two variables are correlated we can say
- a) that they have a perfect positive relationship
 - b) that they share variance
 - c) high scores are frequent on x and y
 - d) that they are independent
16. Which of the following could be value of correlation coefficient
- a) 0.30
 - b) +1.00
 - c) -0.27
 - d) All of the above
17. In correlation, which of the following tells us that we have a perfect positive relationship
- a) $r = +1$
 - b) All the points on the scatter diagram would fall on a straight line and the slope would be from bottom left to top right of the plot
 - c) The dots on the scatter diagram would fall in a straight line from top left-hand corner down to bottom right hand corner
 - d) Both a and b
18. You have a correlation coefficient of 0.45 between two variables. How much variance would these two variables (to the nearest whole number) share, in percentage terms
- a) 16%
 - b) 67%
 - c) 25%
 - d) 20%
19. A teacher surveys the students attending a seminar and finds that 20% are I BA students and 45% are II BA students. This is an example of
- a) descriptive statistics
 - b) inferential statistics
 - c) secondary data
 - d) nominal data

20. Which of the following does not represent one method to obtain primary source data
- a) making observations
 - b) sending a survey to customers
 - c) looking in journals
 - d) conducting an experiment
21. The grades that a random sample of BA students received over the last five years in Quantitative Techniques examinations represent what statistical concept
- a) the grades are a parameter
 - b) the grades are a statistic
 - c) the grades are a sample
 - d) the grades are a population
22. What method is used to sample a population so that it is representative of the population
- a) samples are chosen at random from the population
 - b) every other element in a population is chosen
 - c) all but the observations that have the lowest and highest values are selected
 - d) only the first half of a population is selected
23. An insurance agent earns a commission on each policy sold. This person made Rs.3,000 in commissions during one month and concludes that annual compensation will be Rs. 36,000. This is an example of:
- a) descriptive statistics
 - b) inferential statistics
 - c) secondary data
 - d) nominal data
24. A student evaluation of teaching effectiveness for a particular course asks students to respond to their level of agreement with several statements according to the scale 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, and 5 = Strongly Disagree. The responses indicate what level of measurement?
- a) ordinal
 - b) ratio
 - c) nominal
 - d) interval
25. A company publishes data on its quarterly earnings for its stockholders to evaluate. Which of the following is true
- a) the source is primary for both the company and the stockholders
 - b) the source is secondary for both the company and the stockholders
 - c) the source is primary for the company and secondary for the stockholders
 - d) the source is secondary for the company and primary for the stockholders
26. If you have a digital weighing machine in your college that only reads in integers, is your weight a discrete variable
- a) yes, because the scale reports integers
 - b) no, because weight is still a continuous variable regardless of the ability to measure it
 - c) it depends on the accuracy of the scale
 - d) it depends on your weight
27. Information from a collection of samples may be used to draw conclusions about an entire _____ from which the sample data are drawn.
- a) population
 - b) sample
 - c) statistic
 - d) parameter

28. Statistics is the study of _____ measures of the values associated with variables
- a) verbal
 - b) pictorial
 - c) descriptive
 - d) numerical
29. 'Primary source data is better than secondary source data'. This statement is
- a) true
 - b) false
 - c) neither true nor false
 - d) any of the above
30. Celsius and Fahrenheit temperature scales are examples of interval levels of measurement
- a) true
 - b) false
 - c) neither true nor false
 - d) any of the above
31. The number of students on a college campus is a continuous variable
- a) true
 - b) false
 - c) neither true nor false
 - d) any of the above
32. _____ refer to population characteristics while _____ describe sample characteristics
- a) statistic, parameter
 - b) parameter, statistic
 - c) regression, correlation
 - d) correlation, regression
33. Gender is categorized as _____ data
- a) nominal
 - b) ordinal
 - c) interval
 - d) ratio
34. You are conducting a study to see whether a new experimental medication will cause bald men to grow hair. You divide your patients into 2 groups. To one group you give the medication. To the other group, you give a placebo. In this study, the correct terms for the taking of the medication and the growth of hair are the following.
- a) Both the medication and the hair growth are dependent variables
 - b) Both the medication and the hair growth are independent variables
 - c) the medication is the dependent variable, and the hair growth is the independent variable
 - d) the medication is the independent variable, and the hair growth is the dependent variable
35. Which of the following definitions is the definition of the MODE?
- a) the Mode is the value that has the highest frequency
 - b) the Mode is the average calculated by adding up all the values and dividing by the number of entries
 - c) the Mode is the largest value
 - d) the Mode is the value that half of the entries are below and half of the entries are above.
36. The concept of a variable implies that the values of every characteristic of an item are different
- a) true
 - b) false
 - c) neither true nor false
 - d) any of the above

37. Which of the following definitions is the definition of the MEAN

- a) the Mean is the largest value
- b) the Mean is the value that half of the entries are below and half of the entries are above
- c) the Mean is the value that has the highest frequency
- d) the Mean is the average calculated by adding up all the values and dividing by the number of entries

38. Which of the following definitions is the definition of the MEDIAN?

- a) The Median is the value that half of the entries are below and half of the entries are above
- b) the Median is the value that has the highest frequency
- c) the Median is the largest value
- d) the Median is the average calculated by adding up all the values and dividing by the number of entries.

39. What is the median of the following set of numbers?

{12,8,13,4,7,6,3,3,15}

- a)12
- b) 8
- c) 7
- d)7.5

40. What is the mode and the mean for the following set of numbers?

{4,9,8,2,16,4,4,8,9,6}

- a) mean = 7, mode =8
- b)mean = 7, mode =4
- c) mean = 6, mode =8
- d) mean = 8, mode =9

41. The first step in the formation of a frequency table is

- a) choosing a suitable size or width of class intervals
- b) establishing the boundaries of each class intervals
- c) deciding an appropriate number of class groupings
- d) classifying the data into the appropriate classes

42. A teacher had 5 students who took a test. Their test scores are as follows: 62, 86, 72, 66,

72. What is the mode of the test

- a) 72
- b) 86
- c) 62
- d) 86

43. The mean in the following numbers is _____:19, 21, 18, 17, 18, 22, 46

- a) 17
- b)16
- c)19
- d) 23

44. When calculating median of data set, the first step is:

- a) calculate the mean of two middle items in the data set
- b) arrange the data in ascending or descending order
- c) determine the relative weights of data values in terms of importance
- d) find the total

45. Students A,B and C took part in a recent quiz. Student A scored 50 points, Student B scored 60 points and Student C scored 70 points. What is the mean of this quiz

- a) 60
b) 50
c) 70
d) 45

46. Which of the following statement is not correct in respect of the range as a measure of dispersion

- a) only two points in the data set determines it
b) it is affected by extreme values
c) there may be considerable change in it from one sample to another
d) it is difficult to calculate

47. Contestants of a competition have reached the semi-finals. After the semi-finals, their score are of below. Those whose score is lower than the median will not be able to enter the finals, so who managed to enter the finals. Here is the list of contestants: Anoop - 70 Points, Babu - 50 Points, Cindu - 65 Points, Das - 90 Points, Emy - 55 Points, Fasna - 85 Points, Gopi - 100 Points

- a) Babu, Cindu and Emy
b) Anoop, Das, Fasna and Gopi
c) Anoop, Babu, Cindu and Emy
d) Babu, Cindu, Das, Gopi

48. What is the median in the following numbers: 19, 21, 18, 17, 18, 22, 46

- a) 19
b) 18
c) 17
d) 21

49. In a symmetrical series:

- a) mode > mean
b) mean > median
c) mean < mode
d) mean = mode = median

50. A teacher had 5 students who took a test. Their test scores are as follows: 62, 86, 72, 66, 72. What is the mode of the test

- a) 72
b) 86
c) 62
d) 66

51. Find the range in the following numbers: 9, 8, 15, 8, 20

- a) 12
b) 15
c) 8
d) 20

52. The scores of a cricketer in eight one day matches is 36, 38, 33, 34, 32, 30, 34, 35. What is his average score

- a) 45
b) 35
c) 38
d) 34

53. For the following distribution which of the following statement is true

36, 38, 33, 34, 32, 30, 34, 35

- a) median > mean < mode
b) median > mean = mode
c) median = mean < mode
d) median = mean = mode

54. Students A,B and C took part in a recent quiz. Student A scored 50 points, Student B scored 60 points and Student C scored 70 points. What is the mean of this quiz
- a) 60
b) 50
c) 70
d) 45
55. Which of the following statements describes 'Statistics' most appropriately
- a) statistics is the science of counting.
b) statistics is the science of averages.
c) statistics is concerned with the collection, presentation and analysis of data leading to valid conclusions.
d) statistics is the aggregate of facts
56. Which of the curves is more peaked than the normal curve?
- a) Mesokurtic
b) Platykurtic
c) Lapokurtic
d) Skewness
57. What will be the range of "r" when we find that the dependent variable increases as the independent variable increases
- a) 0 to -0.05
b) 1 to 2
c) 0.1 to 1
d) 2 to 3
58. When the two regression lines coincide, then 'r' value is
- a) 0
b) -1
c) 0.5
d) 1
59. When the correlation coefficient between x and y is positive, then as variable x decreases, variable y
- a) decreases
b) increases
c) remains the same
d) changes linearly
60. Which of the following correlation coefficients shows the highest degree of association
- a) -1
b) 1
c) 0.9
d) both a & b
61. The sum of deviations taken from arithmetic mean is
- a) minimum
b) zero
c) maximum
d) none of the above is possible
62. Which of the following statements is not correct
- a) extreme value in data affects the mean
b) mean is also known as average
c) some data sets do not have mean
d) at times weighted mean is much better than the simple mean

63. Which of the following is not true in respect of mean deviation

- a) it is simple to understand
- b) it considers each & every item in a series
- c) it is capable of further algebraic treatment
- d) the extreme items have less effect on its magnitude

64. What is the purpose of a summary table?

- a) to see differences between or among categories
- b) to list data to create a bar or pie chart
- c) this is the only way to present categorical data in numerical form
- d) to sum the values of responses to a survey

65. A graphical representation of a frequency distribution is called a _____

- a) scatter diagram
- b) histogram
- c) time-series plot
- d) stem-and-leaf plot

66. The width of a class interval in a frequency distribution (or bar chart) will be approximately equal to the range of the data divided by the _____ .

- a) highest value in the data set
- b) average of the data set
- c) lowest value in the data set
- d) number of class intervals

67. When constructing a frequency distribution, which of the following rules must be followed?

- a) the midpoint of each class must be an integer
- b) the width of each class is equal to the lowest value in the data set
- c) the number of classes must be an even number
- d) adjacent classes cannot overlap

68. The rule of thumb for creating a frequency distribution is to divide the data into 5-15 classes. While larger numbers of classes allow for larger data sets, how do you know exactly how many classes to use

- a) if in doubt about the number of classes, select 10 since it is the midpoint between 5 and 15 classes
- b) select the number of classes that provides definition to the shape of the data
- c) determine the width of the class interval, then calculate the number of classes
- d) any number of classes between 5 and 15 is sufficient

69. Considering the various types of tables and charts you have studied, which table, chart, diagram or plot would you use to depict categorical data for two variables in a visual format

- a) bar chart
- b) pie chart
- c) scatter plot
- d) contingency table

70. For the list of values, 13, 18, 13, 14, 13, 16, 14, 21, 13, the mean, median, mode, and range are in the order

- a) 15, 13, 14, 8
- b) 15, 14, 13, 8
- c) 8, 15, 14, 13
- d) 14, 15, 13, 8

71. A student has gotten the following grades on his tests: 87, 95, 76, and 88. He wants an 85 or better overall. What is the minimum grade he must get on the last test in order to achieve that average

- a) 76
- b) 85
- c) 87
- d) 79

72. Arrange the numbers in numerical order and see which is repeated most often. This describes which measure of central tendency

- a) mean
- b) median
- c) range
- d) mode

73. The cumulative frequency for a particular class is equal to 35. The cumulative frequency for the next class will be _____

- a) less than 35
- b) equal to 65
- c) 35 minus the next class frequency
- d) 35 plus the next class frequency

74. Which of the following would be most helpful in the construction of a pie chart

- a) cumulative percentages
- b) ogive
- c) relative frequencies
- d) frequency distribution

75. The highest bar in a histogram represents

- a) the class with the lowest relative frequency
- b) the class with the lowest frequency
- c) the class with the highest frequency
- d) the class with the highest cumulative frequency

76. The movie theater industry tracks ticket sales by age groups. A _____ would provide an appropriate representation for the proportion of ticket sales attributed to each age group.

- a) ogive
- b) line graph
- c) scatter diagram
- d) pie chart

77. You are constructing a histogram that is required to use 6 classes for a data set that ranges from 15 to 70. A class width of _____ units would be an appropriate choice

- a) 9
- b) 10
- c) 15
- d) 6

78. A _____ would be an effective tool to assess the relationship between the grade earned in a class and the number of hours spent studying

- a) scatter diagram
- b) bar chart
- c) histogram
- d) pie chart

79. How might an extreme value in the sample data set affect the value of the mean

- a) an extreme value cannot affect the mean if it is close to the mean
- b) all values are treated equally when determining the mean, so an extreme value cannot affect it
- c) since all values are summed, any extreme value can influence the mean to a large extent
- d) one extreme value is still only one value, so it cannot affect the mean very much

80. Which of the following is not a measure of central tendency

- a) interquartile range
- b) median
- c) mode
- d) geometric mean

81. Which of the following is the most appropriate measure of central tendency for ordinal data

- a) coefficient of Variation
- b) variance
- c) median
- d) mean

82. Which of the following measures of central tendency is not affected by extreme values in the sample data set

- a) mode
- b) median
- c) median and mode
- d) mean

83. How many elements of a data set are between the first and third quartiles

- a) one half
- b) one third
- c) one fourth
- d) three fourths

84. Which of the following measures become larger as the data is more dispersed

- a) median and range
- b) mean, variance, and standard deviation
- c) mean and median
- d) range, variance, and standard deviation

85. The sum of deviations about the arithmetic mean is always equal to _____

- a) 1
- b) 0
- c) variance
- d) geometric mean

86. The coefficient of correlation will be a value in which of the following ranges

- a) (0, 1)
- b) (-1, 1)
- c) (-1, 0)
- d) (-infinity, +infinity)

87. How is the arithmetic mean related to the variance

- a) variance has the square of the mean in its formula
- b) variance is not related to the mean, but standard deviation is
- c) variance measures the variability of values about the mean
- d) they are not related. One is a measure of central tendency, and the other is a measure of variance

88. Summary statistics for two samples of data are

Sample 1: mean=19 variance=10

Sample 2: mean=10 variance=19 Which sample has the larger spread of observations

- a) sample 2
- b) sample 1
- c) neither; they have the same spread
- d) there is not enough information to answer the question

89. Consider the 3 observations 3,7,11 for which the mean is 7 and the standard deviation is 4. If we add 2 to each value, what are the new mean and standard deviation

- a) the mean is 9 and the standard deviation is 2
- b) the mean is 9 and the standard deviation is 4
- c) the mean is 7 and the standard deviation is 4
- d) the mean is 7 and the standard deviation is 6

90. Why use samples rather than the entire population

- a) selecting a sample is less time-consuming than using every item in the population
- b) an analysis based on a sample is more practical than an analysis of the population
- c) selecting a sample is less costly than using every item in the population
- d) all of the above reasons justify statistical sampling procedures

91. Which of the following sampling techniques will not result in a probability sample?

- a) stratified
- b) quota
- c) random
- d) systematic

92. A student is collecting data for a project from a list of 300 agricultural loan beneficiaries given by a bank. The student constructs a sampling procedure that will begin with the 7th person in the list and collect every 10th person thereafter (17th, 27th, etc.). This procedure results in which of the following types of samples

- a) simple random
- b) convenience
- c) systematic
- d) stratified

93. The standard deviation of a sampling distribution is commonly called which of the following

- a) sampling deviation
- b) standard margin
- c) standard error
- d) statistical range

94. Which of the following techniques yields a simple random sample

- a) choosing volunteers from an introductory psychology class to participate
- b) listing the individuals by ethnic group and choosing a proportion from within each ethnic group at random
- c) numbering all the elements of a sampling frame and then using a random number table to pick cases from the table
- d) randomly selecting schools, and then sampling everyone within the school

95. People who are available, volunteer, or can be easily recruited are used in the sampling method called _____

- a) simple random sampling
- b) cluster sampling
- c) systematic sampling
- d) convenience sampling

96. Which of the following types of sampling involves the researcher determining the appropriate sample sizes for the groups identified as important, and then taking convenience samples from those groups

- a) proportional stratified sampling
- b) quota sampling
- c) one-stage cluster sampling
- d) two-stage cluster sampling

97. In which of the following nonrandom sampling techniques does the researcher ask the research participants to identify other potential research participants

- a) snowball
- b) convenience
- c) purposive
- d) quota

98. The type of sampling in which each member of the population selected for the sample is returned to the population before the next member is selected is called _____

- a) sampling without replacement
- b) sampling with replacement
- c) simple random sampling
- d) systematic sampling

99. Which of the following is not a type of nonrandom sampling

- a) cluster sampling
- b) convenience sampling
- c) quota sampling
- d) purposive sampling

100. _____ is a set of elements taken from a larger population according to certain rules

- a) sample
- b) population
- c) statistic
- d) element

101. In an interview schedule to collect data from public, as response categories to the question "What is your age" the following are given. 1-5, 5-10, 10-20, 20-30, 30-40. What is the problem(s) with this

- a) the categories are not mutually exclusive
- b) the categories are not exhaustive
- c) both a and b are problems
- d) there is no problem with the above set of response categories

102. Questionnaires can address events and characteristics taking place _____

- a) in the past (retrospective questions)
- b) in the present (current time questions)
- c) in the future (prospective questions)
- d) all of the above

103. Which of the following terms best describes data that were originally collected at an earlier time by a different person for a different purpose

- a) primary data
- b) secondary data
- c) experimental data
- d) field notes

104. Which of the following is true concerning observation method of data collection

- a) it takes less time than self-report approaches
- b) it costs less money than self-report approaches
- c) it is often not possible to determine exactly why the people behave as they do
- d) all of the above

105. Correlation refers to

- a) the causal relationship between two variables
- b) the association between two variables
- c) the proportion of variance that two variables share
- d) a statistical method that can only be used with a correlational research design

106. If two variables are highly correlated, what do you know

- a) that they always go together
- b) that high values on one variable lead to high values on the other variable
- c) that there are no other variables responsible for the relationship
- d) that changes in one variable are accompanied by predictable changes in the other

107. A researcher finds a correlation of 0.40 between personal income and the number of years of college completed. Based upon this finding he can conclude that

- a) a person who attended four years of college will have an annual income of Rs. 40,000
- b) more years of education causes higher income
- c) personal income is a positively skewed variable
- d) more years of education are associated with higher income

108. Which of the following would not allow you to calculate a correlation?

- a) a negative relationship between X and Y
- b) a positive relationship between X and Y
- c) a curvilinear relationship between X and Y
- d) a linear relationship between X and Y

109. Correlation relates the relative position of a score in one distribution to

- a) the relative position of a score in another distribution
- b) the mean of the z-scores from another distribution
- c) the total variance of all scores in both distributions
- d) the standard deviation of the z-scores for both distributions

110. If a positive correlation exists between height and weight, a person with above average height is expected to have above average weight

- a) true
- b) false
- c) insufficient information to draw a conclusion
- d) all of the above

111. Regression analysis:

- a) measures the demand for a good
- b) measures growth
- c) establishes cause and effect
- d) establishes a relationship between two variables

112. In the equation of a straight line, $Y = mX + c$ the term, m is the:

- a) independent variable
- b) intercept
- c) dependent variable
- d) slope

113. In the equation of a straight line, $Y = mX + c$, if c is equal to zero then:

- a) the line of best fit passes through the origin
- b) the line of best fit cuts the X axis to the right of the Y axis
- c) does not cross the X axis
- d) the line of best fit cuts the X axis to the left of the Y axis

114. In the equation of a straight line, $Y = mX + c$, if m is equal to -2 then:

- a) there is a positive relationship between the two variables
- b) there is no relationship between the two variables
- c) there is a negative relationship between the two variables
- d) the relationship between the two variables is perfect

115. In the equation of a straight line, $Y = mX + c$, if m is equal to zero then when:

- a) X increases Y decreases
- b) Y increases X increases
- c) X increases Y increases
- d) X increases Y remains constant

116. If the Pearson correlation co-efficient R is equal to 1 then:

- a) there is a perfect positive relationship between the two variables
- b) there is a positive relationship between the two variables
- c) there is no relationship between the two variables
- d) there is a negative relationship between the two variables

117. The mathematical notation R^2 is for:

- a) the Co-efficient of Determination
- b) the Co-efficient of Variation
- c) Spearman's Co-efficient of Rank Correlation
- d) Pearson's Co-efficient of Correlation

118. If R^2 is calculated to be 0.98 how confident would you be in using the line of best fit for prediction

- a) the relationship is random and thus cannot be predicted
- b) the relationship is too weak to predict
- c) very confident
- d) not confident

119. If the slope of the regression line is calculated to be 2.5 and the intercept 16 then the value of Y when X is 4 is:

- a) 16
- b) 66.5
- c) 2.5
- d) 26

120. If Spearman's co-efficient of rank correlation is equal to one, then:

- a) all the 'total variation' is 'explained' by the regression line
- b) the rankings of the two variables partially agree
- c) the rankings of the two variables is totally different
- d) the rankings of the two variables totally agree

121. The correlation coefficient is used to determine:

- a) a specific value of the y-variable given a specific value of the x-variable
- b) a specific value of the x-variable given a specific value of the y-variable
- c) the strength of the relationship between the x and y variables
- d) none of these

122. If there is a very strong correlation between two variables then the correlation coefficient must be

- a) any value larger than 1
- b) much smaller than 0, if the correlation is negative
- c) much larger than 0, regardless of whether the correlation is negative or positive
- d) none of these alternatives is correct

123. In regression, the equation that describes how the response variable (y) is related to the explanatory variable (x) is:

- a) the correlation model
- b) the regression model
- c) used to compute the correlation coefficient
- d) None of these alternatives is correct

124. Regression modelling is a statistical framework for developing a mathematical equation that describes how

- a) one explanatory and one or more response variables are related
- b) several explanatory and several response variables response are related
- c) one response and one or more explanatory variables are related
- d) all of these are correct

125. A _____ is a value that may change within the scope of a given problem or set of operations

- a) constant
- b) variable
- c) function
- d) exponent

126. _____ variable is a factor that is not itself under study but affects the measurement of the study variables or the examination of their relationships.

- a) exogenous
- b) endogenous
- c) extraneous
- d) dependent

127. An index number is used:

- a) to measure changes in quantity
- b) to measure changes in demand
- c) to measure changes in a variable over time
- d) to measure changes in price

128. The ratio of a new price to the base year price is called the:

- a) price absolute
- b) price decrease
- c) price increase
- d) price relative

129. A simple aggregate quantity index is used to:

- a) measure the change in price of a product
- b) measure the change in quantity of a product
- c) measure the overall change in quantity of a range of products
- d) measure the overall change in price of a range of products

130. A simple aggregate price index:

- a) ignores relative quantities
- b) compares relative quantities to relative prices
- c) considers relative quantities
- d) compares absolute prices to absolute quantities

131. This index measures the change from month to month in the cost of a representative 'basket' of goods and services of the type bought by a typical household

- a) Paasche Price Index
- b) Retail Price Index
- c) Laspeyres Price Index
- d) Financial times Index

132. The Laspeyres and Paasche index are examples of:

- a) Weighted price index only
- b) Aggregate index numbers
- c) Weighted index numbers
- d) Weighted quantity index only

133. The Laspeyres price index:

- a) regards the current year quantities as fixed
- b) regards the base year quantities as fixed
- c) regards the base year prices as fixed
- d) regards the current quality as fixed

134. A scaling factor is used to:

- a) change a simple index to a weighted index
- b) convert the Paasche index to a Laspeyres index
- c) change an aggregate index to a weighted index
- d) change the base year

135. The distinctive feature of the _____ index is that it uses a group of commodities purchased in the base period as the basis for comparison

- a) Paasche's
- b) Laspeyres
- c) Fisher's
- d) Dorbish-Bowley

136. _____ was developed to measure changes in the cost of living in order to determine the wage increases necessary to maintain a constant standard of living.

- a) Price index
- b) Sensex
- c) Correlation
- d) Regression

137. _____ measure of living costs based on changes in retail prices

- a) Correlation
- b) Whole sale price index
- c) Consumer price index
- d) Regression

138. Paasche index was developed by _____ economist Hermann Paasche for measuring current price or quantity levels relative to those of a selected base period

- a) American
- b) British
- c) Australian
- d) German

139. The ratio-moving-average procedure can be used to deseasonalize data

- a) true
- b) false
- c) either of the above
- d) none of the above

140. The weighing factor, used in the exponential smoothing method, is always a number between _____

- a) zero and ten
- b) five and ten
- c) zero and one
- d) zero and negative one

141. A moving average of a time series is the value around which a series moves over time.

- a) true
- b) false
- c) either of the above
- d) none of the above

142. In a time series analysis it is often important to analyze seasonal variations
- a) true
 - b) false
 - c) either of the above
 - d) none of the above
143. The index number for the price of a good in 2002 was 142 and in 2003, it was 148.5, on a base year of 1994. What is the percent increase in price of gasoline from 2002 to 2003
- a) 4.377%
 - b) 4.577%
 - c) 95.62%
 - d) 6.5%
144. Which one of the following is not a component of the multiplicative time series model?
- a) trend
 - b) irregular variation
 - c) regression trend
 - d) seasonality
145. Which of the following is not a component of the multiplicative time series model?
- a) trend analysis
 - b) seasonal variation
 - c) cyclical variation
 - d) regressive variation
146. Demand for seats in a university is at its highest in the fall; demand also tends to grow and fall off in 25-year waves. In time-series forecasting, the former demand characteristic would be called _____ and the latter would be called _____
- a) Seasonality: cyclical
 - b) Cyclical; seasonality
 - c) Variability: randomness
 - d) Randomness; seasonality
147. The time series component that indicates a steady increase or decrease over time is known as a _____
- a) order
 - b) pattern
 - c) trend
 - d) seasonality
148. A pattern in a times-series model that occurs over a duration of more than a year is called a _____ variation
- a) trend
 - b) seasonal
 - c) cyclical
 - d) regressive
149. Which two components are smoothed out by the moving average
- a) seasonality and irregular
 - b) cyclical; seasonality
 - c) variability: randomness
 - d) randomness; seasonality
150. If a value is missing in a time series we can do one of the following
- a) just copy the previous value
 - b) estimate it as an average between two neighbouring values
 - c) take the overall mean as the best estimate of it
 - d) ignore it
151. One of the classifications of time series is that they can be either
- a) categorical or ordinal
 - b) stationary or non-stationary
 - c) inflationary or non-inflationary
 - d) increasing or decreasing

152. Another name for the regression method is

- a) linear method
- b) univariate method
- c) time series method
- d) causal method

153. Exponential smoothing is

- a) a method to use number exponents to smooth the time series
- b) one of the forecasting methods
- c) a method of testing linearity
- d) a method to find elasticity

154. "Sensex" is related to

- a) BSE
- b) NSE
- c) RBI
- d) SEBI

155. Time-series analysis is based on the assumption that

- a) random error terms are normally distributed
- b) there are dependable correlations between the variable to be forecast and other independent variables
- c) past patterns in the variable to be forecast will continue unchanged into the future
- d) the data do not exhibit a trend

156. Which of the following is not one of the four types of variation that is estimated in time-series analysis

- a) predictable
- b) trend
- c) cyclical
- d) irregular

157. The cyclical component of time-series data is usually estimated using

- a) linear regression analysis
- b) moving averages
- c) exponential smoothing
- d) qualitative methods

158. In time-series analysis, which source of variation can be estimated by the ratio-to-trend method

- a) cyclical
- b) trend
- c) seasonal
- d) irregular

159. If regression analysis is used to estimate the linear relationship between the natural logarithm of the variable to be forecast and time, then the slope estimate is equal to

- a) the linear trend
- b) the natural logarithm of the rate of growth
- c) the natural logarithm of one plus the rate of growth
- d) the natural logarithm of the square root of the rate of growth

160. The use of a smoothing technique is appropriate when
- a) random behaviour is the primary source of variation
 - b) seasonality is present
 - c) data exhibit a strong trend
 - d) all of the above are correct
161. Barometric methods are used to forecast
- a) seasonal variation
 - b) secular trend
 - c) cyclical variation
 - d) irregular variation
162. A single-equation econometric model of the demand for a product is a _____ equation in which the quantity demanded of the product is an _____ variable
- a) structural, exogenous
 - b) structural, endogenous
 - c) definitional, exogenous
 - d) definitional, endogenous
163. Econometric forecasts require
- a) accurate estimates of the coefficients of structural equations
 - b) forecasts of future values of exogenous variables
 - c) appropriate theoretical models
 - d) all of the above
164. Laspeyre's formula does not obey
- a) Factor Reversal Test
 - b) Time Reversal Test
 - c) Circular Test
 - d) None
165. P_{10} is the index for time
- a) 1 on 0
 - b) 0 on 1
 - c) 1 on 1
 - d) 0 on 0
166. Fisher's Ideal Formula for calculating index nos. satisfies the _____ tests
- a) Units Test
 - b) Factor Reversal Test
 - c) Both a and b
 - d) do not satisfy any test
167. _____ is particularly suitable for the construction of index nos
- a) Harmonic Mean
 - b) Arithmetic Mean
 - c) Geometric Mean
 - d) None
168. The _____ of group indices given the General Index
- a) Harmonic Mean
 - b) Arithmetic Mean
 - c) Geometric Mean
 - d) None of the above
169. In computing Index Numbers, _____ is concerned with the measurement of price changes over a period of years, when it is desirable to shift the base
- a) Unit Test
 - b) Circular Test
 - c) Time Reversal Test
 - d) None of the above

170. Index nos. are often constructed from the

- a) frequency
- b) class
- c) sample
- d) none

171. The formula should be independent of the unit in which or for which price and quantities are quoted in

- a) Unit Test
- b) Time Reversal Test
- c) Factor Reversal Test
- d) None of the above

172. Factor Reversal test is satisfied by

- a) Fisher's Ideal Index
- b) Laspeyres Index
- c) Paasches Index
- d) none of the above

173. The index no. is a special type of average

- a) False
- b) True
- c) Both
- d) None

174. Laspeyre's method and Paasche's method do not satisfy

- a) Unit Test
- b) Time Reversal Test
- c) Factor Reversal Test
- d) None of the above

175. We use price index numbers

- a) to measure and compare prices
- b) to measure prices
- c) to compare prices
- d) None of the above

176. Simple aggregate of quantities is a type of

- a) quantity control
- b) quantity indices
- c) both
- d) none of the above

177. The test of shifting the base is called

- a) Unit Test
- b) Time Reversal Test
- c) Circular Test
- d) None of the above

178. Price relative is equal to

- a) $\frac{\text{Price in the given year} \times 100}{\text{Price in the base year}}$
- b) $\frac{\text{Price in the base year} \times 100}{\text{Price in the given year}}$
- c) $\text{Price in the given year} \times 100$
- d) $\text{Price in the base year} \times 100$

179. The price relative is a price index that is determined by

- a) $(\text{price in period } t / \text{base period price}) \times 100$
- b) $(\text{base period price} / \text{price in period } t) \times 100$
- c) $(\text{price in period } t + \text{base period price}) \times 100$
- d) none of the above

180. A composite price index based on the prices of a group of items is known as the

- a) Laspeyres Index
- b) Paasche Index
- c) aggregate price index
- d) Consumer Price Index

181. A weighted aggregate price index where the weight for each item is its base period quantity is known as the

- a) Paasche Index
- b) Consumer Price Index
- c) Producer Price Index
- d) Laspeyres Index

182. A monthly price index that uses the price changes in consumer goods and services for measuring the changes in consumer prices over time is known as the

- a) Paasche Index
- b) Consumer Price Index
- c) Producer Price Index
- d) Laspeyres Index

183. A monthly price index that measures the changes in the prices of goods sold in a primary market is known as the

- a) Consumer Price Index
- b) quantity index
- c) Index of Industrial Production
- d) Producer Price Index

184. A composite price index where the prices of the items in the composite are weighted by their relative importance is known as the

- a) price relative
- b) weighted aggregate price index
- c) Consumer Price Index
- d) none of the above

185. An index that is designed to measure changes in quantities over time is known as the

- a) time index
- b) quantity index
- c) Paasche index
- d) change index

186. A quantity index that is designed to measure changes in physical volume or production levels of industrial goods over time is known as the

- a) physical volume index
- b) time index
- c) Index of Industrial Production and Capacity Utilization
- d) none of the above

187. The term econometrics was coined by

- a) Marsahll
- b) Pawel
- c) Ragnar Frisch
- d) Pareto

188. Econometrics model is _____ model

- a) exogenous
- b) endogenous
- c) identified
- d) either exogenous or endogenous

189. The starting point of econometric analysis is

- a) model specification
- b) formulation of alternative hypothesis
- c) formulation of null hypothesis
- d) collection of data

190. Regressor refers to

- a) independent variable
- b) dependent variable
- c) error term
- d) dummy variable

191. In perfect linear model, we assume that regression coefficient remains _____

- a) variable until some point
- b) variable through out
- c) constant to some point
- d) constant through out

192. In econometric models, $t+1$ indicates,

- a) net addition
- b) current value with some fluctuations
- c) expected value
- d) none of these

193. When a north Indian town data and south Indian data are totalled, it leads to the problem of _____ aggregation.

- a) national
- b) regional
- c) spatial
- d) heterogeneous

194. Among the following, which is an assumption of OLS

- a) the explanatory variables are measurable
- b) the relationship being estimated is identified
- c) error term and independent variables are related
- d) error term and independent variables are linearly related

195. The property of average or expected value is equal to true value of the coefficient is the property of

- a) zero variance
- b) minimum variance
- c) zero mean
- d) minimum mean

196. The power of a statistical test is defined as,

- a) $1 - \alpha$
- b) $1 + \alpha$
- c) 1
- d) $1 - \beta$

197. Standard error is defined as,

- a) standard deviation of the sampling distribution
- b) standard deviation of the population
- c) variance of the sampling distribution
- d) variance of the population

198. Student t test is preferred in the case of a,

- a) large sample
- b) small sample
- c) when sample is below 50
- d) when sample is above 50

199. Cobb Douglas production function is an example of

- a) linear model
- b) double log model
- c) lin log model
- d) log lin model

200. What is the meaning of the term 'heteroscedasticity'

- a) The variance of the errors is not constant
 - b) The variance of the dependent variable is not constant
 - c) The errors are not linearly independent of one another
 - d) The errors have non-zero mean
-

Answers

- 1. (c) 2.81
- 2. (d) ratio data
- 3. (b) The people of India is called the population, and the people you called are the sample
- 4. (b) sample; population
- 5. (d) All of the above
- 6. (a) as horizontal
- 7. (a) Allow us to predict someone's statistical grade from their mathematical ability
- 8. (c) constant
- 9. (a) criterion or y variable
- 10. (d) In linear regression the line of best fit maximises the distance between the scores and the regression line
- 11. (b) moderate
- 12. (c) correlation
- 13. (c) high; high
- 14. (a) scatter diagram
- 15. (b) that they share variance
- 16. (d) All of the above
- 17. (d) Both a and b
- 18. (d) 20%
- 19. (a) descriptive statistics *(There is a rank to the grade level classification of students. Therefore, this data is ordinal.)*
- 20. (c) looking in journals
- 21. (c) the grades are a sample
- 22. (a) samples are chosen at random from the population
- 23. (b) inferential statistics
- 24. (a) ordinal
- 25. (c) the source is primary for the company and secondary for the stockholders
- 26. (b) no, because weight is still a continuous variable regardless of the ability to measure it
- 27. (a) population
- 28. (d) numerical
- 29. (b) false
- 30. (a) true
- 31. (b) false *Even though it is a relatively large number, the number of students on campus is discrete.*
- 32. (b) parameter, statistic
- 33. (a) nominal
- 34. (d) the medication is the independent variable, and the hair growth is the dependent variable

35. (a) the Mode is the value that has the highest frequency
36. (b) false
37. (d) the Mean is the average calculated by adding up all the values and dividing by the number of entries
38. (a) The Median is the value that half of the entries are below and half of the entries are above
39. (d) 7.5
40. (c) mean = 6, mode = 8
41. (c) deciding an appropriate number of class groupings
42. (a) 72
43. (d) 23
44. (b) arrange the data in ascending or descending order
45. (a) 60
46. (d) it is difficult to calculate
47. (b) Anoop, Das, Fasnn and Gerald
48. (a) 19
49. (d) mean = mode = median
50. (a) 72
51. (a) 12
52. (d) 34
53. (d) median = mean = mode
54. (a) 60
55. (c) statistics is concerned with the collection, presentation and analysis of data leading to valid conclusions.
56. (c) Lapokurtic
57. (c) 0.1 to 1
58. (d) 1
59. (a) decreases
60. (d) both a & b
61. (b) zero
62. (c) some data sets do not have mean
63. (c) it is capable of further algebraic treatment
64. (a) to see differences between or among categories
65. (b) histogram
66. (d) number of class intervals
67. (d) adjacent classes cannot overlap
68. (b) select the number of classes that provides definition to the shape of the data
69. (a) bar chart
70. (b) 15, 14, 13, 8
71. (d) 79 *The student needs to get at least a 79 on the last test.*
72. (d) mode
73. (d) 35 plus the next class frequency
74. (b) ogive
75. (c) the class with the highest frequency
76. (d) pie chart

77. (b) 10 *Using the class width to be the range divided by the number of classes, $(70-15)/6 = 9.167$. Therefore, a width of 10 is a more appropriate choice.*
78. (a) scatter diagram
79. (c) since all values are summed, any extreme value can influence the mean to a large extent
80. (a) interquartile range
81. (c) median
82. (a) mode
83. (a) one half
84. (d) range, variance, and standard deviation
85. (b) 0
86. (b) (-1, 1)
87. (c) variance measures the variability of values about the mean
88. (a) sample 2
89. (b) the mean is 9 and the standard deviation is 4
90. (d) all of the above reasons justify statistical sampling procedures
91. (b) quota
92. (c) systematic
93. (c) standard error
94. (c) numbering all the elements of a sampling frame and then using a random number table to pick cases from the table
95. (d) convenience sampling
96. (b) quota sampling
97. (a) snowball
98. (b) sampling with replacement
99. (a) cluster sampling
100. (a) sample
101. (c) both a and b are problems
102. (d) all of the above
103. (b) secondary data
104. (c) it is often not possible to determine exactly why the people behave as they do
105. (b) the association between two variables
106. (d) that changes in one variable are accompanied by predictable changes in the other
107. (d) more years of education are associated with higher income
108. (c) a curvilinear relationship between X and Y
109. (a) the relative position of a score in another distribution
110. (a) true
111. (d) establishes a relationship between two variables
112. (d) slope
113. (a) the line of best fit passes through the origin
114. (c) there is a negative relationship between the two variables
115. (d) X increases Y remains constant
116. (a) there is a perfect positive relationship between the two variables
117. (a) the Co-efficient of Determination
118. (c) very confident
119. (d) 26 $Y = 4(2.5) + 16 = 26$
120. (d) the rankings of the two variables totally agree

121. (c) the strength of the relationship between the x and y variables
122. (b) much smaller than 0, if the correlation is negative
123. (b) the regression model
124. (c) one response and one or more explanatory variables are related
125. (b) variable
126. (c) extraneous
127. (c) to measure changes in a variable over time
128. (d) price relative
129. (d) measure the overall change in price of a range of products
130. (a) ignores relative quantities
131. (b) Retail Price Index
132. (c) Weighted index numbers
133. (b) regards the base year quantities as fixed
134. (d) change the base year
135. (b) Laspeyres
136. (a) Price index
137. (c) Consumer price index
138. (d) German
139. (a) true
140. (c) zero and one
141. (b) false
142. (a) true
143. (b) 4.577%
144. (c) regression trend
145. (d) regressive variation
146. (a) Seasonality: cyclical
147. (c) trend
148. (c) cyclical
149. (a) seasonality and irregular
150. (b) estimate it as an average between two neighbouring values
151. (b) stationary or non-stationary
152. (d) causal method
153. (b) one of the forecasting methods
154. (a) BSE
155. (c) past patterns in the variable to be forecast will continue unchanged into the future
156. (a) predictable
157. (d) qualitative methods
158. (c) seasonal
159. (c) the natural logarithm of one plus the rate of growth
160. (a) random behaviour is the primary source of variation
161. (c) cyclical variation
162. (b) structural, endogenous
163. (d) all of the above
164. (b) Time Reversal Test
165. (b) 0 on 1

166. (c) Both a and b
167. (c) Geometric Mean
168. (b) Arithmetic Mean
169. (b) Circular Test
170. (c) sample
171. (a) Unit Test
172. (a) Fisher's Ideal Index
173. (b) True
174. (b) Time Reversal Test
175. (a) to measure and compare prices
176. (b) quantity indices
177. (c) Circular Test
178. (a) $\frac{\text{Price in the given year} \times 100}{\text{Price in the base year}}$
179. (a) $(\text{price in period } t / \text{base period price})(100)$
180. (c) aggregate price index
181. (d) Laspeyres Index
182. (b) Consumer Price Index
183. (d) Producer Price Index
184. (b) weighted aggregate price index
185. (b) quantity index
186. (c) Index of Industrial Production and Capacity Utilization
187. (c) Ragnar Frisch
188. (d) either exogenous or endogenous
189. (c) formulation of null hypothesis
190. (a) independent variable
191. (d) constant through out
192. (c) expected value
193. (c) spatial
194. (b) the relationship being estimated is identified
195. (b) minimum variance
196. (a) 1–
197. (a) standard deviation of the sampling distribution
198. (b) small sample
199. (b) double log model
200. (a) The variance of the errors is not constant