STT206 - STATISTICS FOR MANAGEMENT SCIENCES II

_____plays an important role as a management tool for making decisions.
Statistics

_____can be defined as a management tool for making decision.
Statistics

_____is a scientific approach to presentation of numerical information in such a way that one will have a maximum understanding of the reality represented by such information.
Statistics

_____is defined as the presentation of facts in numerical forms.
Statistics

A more comprehensive definition of statistics shows statistics as a scientific method which is used for collecting, summarizing, classifying, analyzing and presenting information in such a way that we can have thorough understanding of the reality the information represents.

The following are the functions of statistics

- Government uses statistics as a tool for collecting data on economic aggregates such as national income, savings, consumption and gross national product.
- Government uses statistics during census
- Business uses statistics to monitor the various changes in the national economy for the various budget decisions.
- Business makes use of statistics in production, marketing, administration and in personnel management.
- Statistics is used extensively to control and analyze stock level such as minimum, maximum and reorder levels.
- It is used by business in market research to determine the acceptability of a product that will be demanded at various prices by a given population in a geographical area.
- Management uses statistics to make forecast about the sales and

labour cost of a firm. Management uses statistics to establish

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mathematical relationship between two or more variables for the purpose of predicting a variable in terms of others.

_____may be person, place, and thing on which we make observations.
Entity

_____is a characteristic that assumes different values for different entities.
Variable

The weights of pupils in the primary school constitute a_____.
Variable

_____is a variable whose values are given as numerical quantities.
Quantitative variable

_____is a variable that is not measurable in numerical form or that cannot be counted.
Qualitative variable

Examples of this are colours of fruits, taste of some brands of a biscuit.

_____is the variable that can only assume whole numbers.
Discrete variable

Examples of these are the number of Local Government Council Areas of the States in Nigeria, number of female students in the various programmes in the National Open University.

_____is a variable that can assume both decimal and non decimal values.
Continuous variable

_____is the largest number of entities in a study.
Population

The largest number of entities in a study s called_____
Population

_____is the part of the population that is selected for a study.
Sample

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_____ is a sample drawn from a population in such a way that the results of its analysis may be used to generalize about the population from which it was drawn.
Random sample

Variables can be assigned numerical values.
True

The assignment of numerical values to variables information is called_____
Coding

Variables can be assigned numerical values. This assignment of numerical values to information is called_____.
Coding

Qualitative data can be arranged in order of impoi values assigned to them in that order. This is called_____.
Ranking

A_____is any characteristic of an object or concept that is capable different values or falling into more than one distinct category.
Variable

Any characteristic of an vary in time and space is called a _____
Variable

Quantitative variable can be classified into_____major types
Two

Quantitative variable can be classified into two major types_____amd _____
Discrete and Continuous

_____ variables are variable those values are whole numbers or integers.
Discrete

Examples of discrete variables include housing unit, number of students in a class, number of goals scored in a foot number of cars sold etc.

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_____variables are variables that assume any value within an interval or r have the property of infinite divisibility.
Continuous

Example weight, height, cost, scores, income, breaking strength etc.

There are four measurement scales available as instruments for measuring variables

- The Ratio Scale
- Nominal Scale
- Ordinal Scale
- Interval Scale

Examples of nominal scale variables include sex, in religious or party affIliation, genotype, blood group, place of residence, etc.

_____scale has all the properties of the nominal, ordinal and interval scales including the additional property of having an absolute zero point.
Ratio scale

The highest level of measurement is_____.
Ratio scale

The binomial distribution is the basis for the popular binomial test of statistical significance.
True

The_____is frequently used to model the number of successes in a sample of size n drawn with replacement from a population of size N.
Binomial distribution

The_____can be said to measure the degree of uniformity of observations in a given set of data.
Variation or dispersion

The_____of a given set of ungrouped data can be determined from an ordered array as the difference between the highest observation and the lowest observation in a distribution.
Range

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Let X_h = Highest observation

X_L = Lowest observation

Then, $R = X_h - X_L$

Given the arrayed data: X = 2,5,8,9,12,13,18,

the range will be:

$R = 18 - 2 = 16.$

_____are the boundaries separating the items in a given distribution or set of data into quarters.

Quartiles

The boundaries separating the items in a given distribution or set of data into quarters are called_____

Quartiles

The_____referred to as the semi-interquartile range is defined as one-half the difference between the upper quartile and the lower quartile.

Quartile deviation

The_____is the most useful measure of variation.

Standard deviation

_____can be defined as the square root of the variance for a given set of data.

Standard deviation

NSE stands for_____

Nigerian Stock Exchange

The measures of skewness are generally called Pearson" s first coefficient of skewness and Pearson" s second coefficient of skewness.

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The Pearson" s No. 1 Coefficient of skewness: The formula used in calculating Pearson" s No. 1 coefficient is:

$$Sk = \frac{\text{Mean} - \text{Mode}}{\sigma}$$

Example: Consider a set of data on monthly sales of a company" s product, the mean of which was found to be N240,000; the mode found to be N135,000; and the standard deviation found to be N85,000. The Pearson" s No. 1 Coefficient of skewness would be calculated as follows:

$$Sk = \frac{\text{mean} - \text{mode}}{\sigma} = \frac{240{,}000 - 135{,}000}{85{,}000}$$

$$= 1.24$$

Kurtosis measures the degree of peakedness of a distribution.

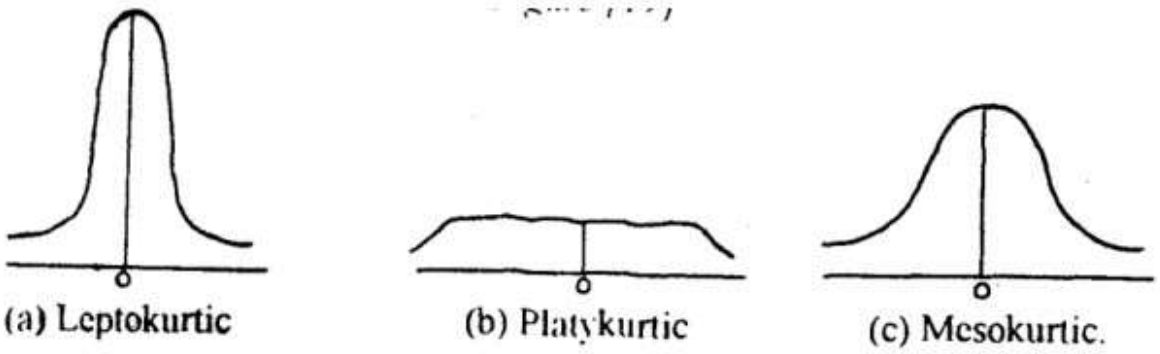
There are_____types of kurtosis namely.
Three

The types of Kurtosis are: leptokurtic, platykurtic and mesokurtic.

The mesokurtic is otherwise known as _____
Normal distribution curve

The figures below show the relative peakedness of distribution of data.

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_____is the modern approach to decision making both in economics and in business.

Decision analysis

_____can be defined as the logical and quantitative analysis of all the factors influencing a decision.

Decision analysis

The primary aim of decision analysis is to _____

Increase the likelihood of good outcomes by making good and effective decisions

There are_____main ways of approaching problems and obtaining solutions.

Two (2)

There are two (2) main ways of approaching problems and obtaining solutions.

1. Analytical Thinking
2. Creative Thinking.

The primary aim of decision analysis is to_____

Increase the likelihood of good outcomes by making good and effective decisions

The art of problem solving and decision making is base on_____.

Common sense

_____is the logical approach and answers questions like What, Who, Where, How, When and Why.

Critical Examinations

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_____is the logical approach which investigation are supposed to indicate possible alternatives or choices from which an acceptable solution may be derived

Critical Examinations

_____is a method base on two head is better than one.

Brain Storming

_____ involves conference techniques by which a group of people attempts to find solution for specified problems by amazing all ideas spontaneously contributed by its members.

Brain Storming

Steps on Brain Storming are as follows

- Orientation
- Consideration
- Speculation (opinion)
- Recommendation

_____is the comparison of one thing with another that has similar features

Analogies

_____is putting self in place of object.

Personal Analogy

_____means to compare things in nature with the situation and use nature" s solution to provide a lead to a suitable solution.

Direct Analogy

_____analogy uses objects and impersonal images.

Symbolic Analogy

In_____analogy the problem is transformed into the realism of fantancy

Fantancy Analogy

_____method looks for the attributes or qualities of the product

Morphological Approach or Attribute Listening

The_____table is usually displayed in grid form

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Payoff

The payoff table is usually displayed in_____form
Grid

A decision-making procedure which employs both the payoff table and prior probabilities associated with the states of nature to arrive at a decision is referred to as the_____decision procedure.
Expected Monetary Value

_____are generally interested in the optimal monetary value decisions.
Decision makers

Decision makers are generally interested in the_____decisions.
Optimal monetary value

Index numbers are indicators which reflect the relative changes in the level of certain phenomenon in any given period (or over a specified period of time) called the current period with respect to its value in some fixed period called the base period selected for comparison.

_____ are indicators which reflect the relative changes in the level of certain phenomenon in any given period (or over a specified period of time) called the current period
Index numbers

Index numbers are indicators which reflect the relative changes in the level of certain phenomenon in any given period (or over a specified period of time) called the _____
Current period

The most common index numbers are the_____which study changes in price level of commodities over a period of time.
Price index numbers

_____depict changes in the general price level of the economy
Wholesale price index number

_____reflect changes in the retail prices of different commodities.
Retail Price Index Number

_____reflect changes in the volume of goods produced or consumed

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Quantity Index Number

_____ study changes in the total value (price X quantity) e.g index number of profit or sales.

Value Index Number

_____ are data collected directly from the field of enquiries by the user(s) themselves.

Primary data

The following are the advantages of Primary data

- They are always relevant to the subject under study because they are collected primarily for the purpose.
- They are more accurate and reliable
- Provide opportunity for the researcher to interact with study population. - Information on other relevant issues can be obtained

The following are the disadvantages of Primary data

- Always costly to collect
- Inadequate cooperation from the study population
- Wastes a lot of time and energy

_____ are data which have been collected by someone else or some organization either in published or unpublished forms.

Secondary Data

The following are the advantages of Secondary Data

- It is easier to get
- It is less expensive

The following are the disadvantages of Secondary Data

- May not completely meet the need of the research at hand because it was not collected primarily for that purpose
- There is always a problem of missing periods

_____ are data collected for cross-section of subjects (population under study) at a time.

Cross-sectional data

_____are data collected on a particular variable or set of variables over time

Time-series data

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GDP stands for_____
Gross Domestic Product

_____combine the features of cross-sectional and time-series data.
Panel Data

_____are type of data collected from the same subjects over time.
Panel Data

The sources of Primary data are_____and Surveys
Census

The sources of Primary data are Census and _____
Surveys

The sources of Secondary data include the following
(i) Publications of the Federal Bureau of statistics
(ii) Publications of Central Bank of Nigeria
(iii) Publications of National population commission
(iv) Nigerian Custom Service
(v) Nigeria Immigration Service
(vi) Nigerian Port Authority
(iv) Federal and State Ministries, Departments and Agencies

Researchers collect data in order to test_____and to provide empirical support for explanations and predictions.
Hypotheses

The entire set of relevant units of analysis or data is called the_____.
Population

When the data serving as the basis for generalizations is comprised of a subset of the population, that subset is called a_____.
Sample

A particular value of the population, such as the mean income or the level of formal education, is called a _____
Parameter

Methodologically, a_____is the "aggregate of all cases that conform to some designated set of specifications".
Population

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A single member of a sampling population (e.g a household) is referred to as a_____.

Sampling unit

A_____is considered to be representative if the analyses made using the researcher" s sampling units produce results similar to those that would be obtained had the researcher analysed the entire population.

Sample

A_____makes it possible for researchers to estimate the extent to which the findings based on one sample are likely to differ from what they would have found by studying the entire population.

Probability sample design

_____ selection procedures ensure that every sampling unit of the population has an equal and known probability of being included in the sample

Random

_____consists of selecting every k th sampling unit of the population after the first sampling unit is selected at random from the total of sampling units.

Systematic sampling

Systematic sampling is more convenient than simple random sampling.

True

_____ method is primarily used to ensure that different groups of population are adequately represented in the sample.

Stratified sampling

_____is frequently used in large-scale studies because it is the least expensive sample design.

Cluster sampling

_____involves first selecting large groupings, called clusters, and then selecting the sampling units from the clusters.

Cluster sampling

The_____are selected by a simple random sample or a stratified sample.

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Clusters

The clusters are selected by a_____or a stratified sample.
Simple random sample

The clusters are selected by a simple random sample or a_____.
Stratified sample

A_____is any subset of sampling units from a population.
Sample

A_____is any combination of sampling units that does not include the entire set of sampling units that has been defined as the population
Subset

Standard is also called error margin or sampling error

_____is the statistical measures that indicate how closely the sample results reflect the true value of a parameter.
Standard error

There are_____methods of data collection with survey
Three

Advantages of mail questionnaires

- The cost is low compared to others
- Biasing error is reduced because respondents are not influenced by interviewed characteristics or techniques
- Questionnaires provide a high degree of anonymity for respondents.
- Respondents have time to think about their answers and /or consult other sources
- Questionnaires provide wide access to geographically dispersed samples at low cost

The disadvantages of mail questionnaires

- Questionnaires require simple, easily understood questions and instructions
- Mail questionnaires do not offer researchers the opportunity to probe for additional information or to clarify answers
- Researchers cannot control who fills out the questionnaire
- Response rate are low

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Factors affecting the response rate of mail questionnaires
Sponsorship
Inducement to response
Questionnaire format and methods of mailing

The_____is a face-to-face interpersonal role situation in which an interviewer asks respondents question designed to elicits answers pertinent to the research hypotheses.
Personal interview

The following are advantages of personal interview

- Flexibility
- Control of the interview situation
- High response rate
- Fuller information

Disadvantages of the personal interview

- Higher cost
- Interviewer bias
- Lack of anonymity

Telephone interview is also called _____
Telephone survey

Advantages of Telephone interview

- Moderate cost
- Speed
- High response rate
- Quality

Disadvantages of Telephone interview

- Reluctant to discuss sensitive topics
- The "broken off" interview
- Less information Interviewers cannot provide supplemental information about the respondents" characteristics or environment.

An _____is value of the sample statistic which is taken as an approximation of the parameter value.
Estimate

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An_____refers to the formula or statistic which has been chosen to provide an estimate of the population value.
Estimator

The mean, mode, medium and variance are examples of_____.
Point estimates

The following are methods of obtaining point estimators of the population parameter.

- Method of maximum likelihood
- Method of least squares
- Method of moments
- Method of moment generating function

MLE stands for_____
Maximum Likelihood Estimator

_____ can be defined as the branches of statistics that deals with mutual dependence or inter-relationship of two or more variables.
Correlation

The branches of statistics that deals with mutual dependence or inter-relationship of two or more variables is called_____
Correlation

Generally,_____implies that variation in one variable when there is a variation in other variable.
Correlation

The degree of relationship existing between two variables is called_____.
Simple correlation

The degree of relationship that connected three or more variables together is called_____
Multiple correlation

_____ can be defined as the situation where all the scatter points passes through a straight line none of the points deviated from the normal curve and positive slope.
Perfect Positive Correlation

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_____indicates that all the points passes through the normal straight line and non deviated from the line.

Perfect Negative Correlation

In_____correlation, most of the scatter points passes through the straight line although there are few deviation from the straight line but the deviation are very close to each other.

Strong Positive Correlation

In a_____, some of the points passes through the straight line and all other scatter point are very close to the straight line it has a negative slope which is very close to unity.

Strong negative correlation

In_____the points are deviated from each other so that each of the scatter points are for the depart from each other and the association is weak.

Weak positive correlation

In a_____, there are serious deviations of scatter points and the points slope downward.

Weak negative correlation

_____refers as the ratio of covariance between the related variables to the square root of the product of individual variance.

Coefficient of correlation

_____is used to determine the extent at which the variable are correlated.

Rank correlation

_____ can be defined as the relationship between two or more variables.

Regression analysis

The following are the importance of regression

- It is used for prediction
- It is used for description of relationship
- To improve on knowledge of variable of interest

There are _____types of regression

Two

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The types of regression are_____and _____
Simple (linear) regression and Multiple (non linear) regression

_____ involve only two variables and the relationship between them tends towards a fixed direction.
Simple (linear) regression

_____ involved more than two variables in the regression model or equation.
Multiple (non linear) regression

A _____ can be defined as a conjectural statement a postulate or a proposition about an assumed relationship between two or more variables.
Hypothesis

Assumption which is subject to testing either may be true or may not be true is called_____
Statistical hypothesis

_____ is the ratio of two independent chi-square variates divided by their respective degrees of freedom.
F-statistic

_____ has a number of applications in the field of statistics. This includes but not limited to the following:
F-distribution

F-distribution has a number of applications in the field of statistics. This includes but not limited to the following:

- To test for equality of population variances
- To the equality of several population means
- For testing the significance of an observed sample multiple correlation
- For testing the significance of an observed sample correlation ratio

Assumption for F-test for equality of variances

- The samples are simple random samples
- The samples are independent of each other
- The parent populations from which the samples are drawn are normal

ANOVA stands for_____
Analysis of Variance

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The square of a standard normal variable is called a _____
Chi-square

LSD stands for_____
Least Significant Difference

Least Significant Difference is also known as _____
Critical Difference

_____are based on past performances.
Forecasts

Forecasts are based on past performances.
True

_____are forecasts concerning the near future.
Short-term forecasts

_____ are forecasts based solely on past and present values of the variable to be forecast.
Extrapolation

_____can be used to generate the general picture (or trend) behind a set of data or time series.
Moving averages

_____provides a sound mathematical basis for choosing the best trend line
The least – squares method

The payoffs associated with each possible outcome in a decision problem should be listed in _____table
Payoff

The measure of dispersion that ensures highest degree of reliability is _____
Standard deviation

Out of all measures of dispersion, the easiest one to calculate is_____
Range

Indicators which reflect the relative changes in the level of certain

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phenomenon in any given period are _____
Index numbers

The most common index numbers are _____
Price index numbers

Individual data can also be called _____ data
Raw

Data which are collected by someone else or some organization either in published or unpublished forms is called _____ data
Secondary

When an investigator uses questionnaire to collect data from group of people in a population, such data is called _____data
Primary

Data collected from CBN website are called _____ data
Secondary

A summary measure that describes any given characteristic of the population is known as a _____
Parameter

Sampling is simply a process of learning about the_____on the basis of a sample drawn from it
Population

The degree of randomness of selection would depend upon the process of selecting the items from the _____
Sample

_____ provides various types of statistical information of either qualitative or quantitative nature
Sampling

Purposive samples can be occasionally referred to as_____samples
Judgment

Method of forecasts used to generate the general picture (or trend) behind a set of data or time series is _____
Moving average

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Forecasts that concern the distant future are _____ forecasts
Long-term

Forecasts based solely on past and present values of the variable to be forecast is called_____ forecasts
Extrapolation

Forecasts concerning the near future are known as _____ forecasts
Short-term

The chi-square goodness-of-fit test is be used to test for _____
Normality

The chi-square test is not very effective if the sample is _____
Simple

In null hypothesis for a Chi-square test, both variables are _____
Independent

The degrees of freedom for the test statistic for μ when σ is unknown is _____
N-1

ANOVA means _____
Analysis of variance

Under coefficient of correlation, When r = 0 i.e. there is_____relationship
No

Under correlation coefficient, When r = +1, there is a_____linear relationship
Perfect positive

Correlation is used to determine the extent at which the variable are correlated is called_____ correlation
Rank

The mathematical method of determined the points estimate of „a" and „b" from the available sample points is called_____method
Least square

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Multiple regression is also known as _____ regression
Non **linear**

In simple linear regression, the numbers of unknown constants are _____
2

The method of least squares dictates that we choose a regression line where the sum of the square of deviations of the points from the line is _____
Minimum

Hypothesis testing starts with a statement about population parameters such as _____
Mean

The conjectural statement a postulate, or a proposition about an assumed relationship between two or more variables is known as _____
Hypothesis

Scale that has all the properties of the nominal, ordinal and interval scales including the additional property of having an absolute zero point is known as _____scale
Ratio

Variables that assume any value within an interval or have the property of infinite divisibility are _____variables
Continuous

Housing unit, number of students in a class, number of goals scored and number of cars are examples of_____variable
Discrete

Variables whose values are given as numerical quantities is called _____ variables
Quantitative

The measure of the degree of uniformity of observations in a given set of data can be said to be _____
Variation

Like other quartiles, the median quartile is at what percent mark:_____%
50

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ANOVA can be classified in _____ ways
2

_____is value of the sample statistic which is taken as an approximation of the parameter value
Estimate

_____ refers to the formula or statistic which has been chosen to provide an estimate of the population value
An estimator

The branches of statistics that deals with mutual dependence or inter-relationship of two or more variables is _____
Correlation

_____ can be defined as the branches of statistics that deals with mutual dependence or inter-relationship of two or more variables.
Correlation

Correlation can be defined as the branches of statistics that deals with mutual dependence or inter-relationship of two or more_____.
Variables

The degree of relationship existing between two variables is called_____.
Simple correlation

The degree of relationship that connected three or more variables together is called_____.
Multiple correlation

MLE means_____
Maximum Likelihood Estimator

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Perfect Positive Correlation

_____ indicates that all the points passes through the normal straight line and non deviated from the line.
Perfect Negative Correlation

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In_____correlation, most of the scatter points passes through the straight line, although there are few deviation from the straight line but the deviation are very close to each other.
Strong Positive Correlation

In a_____, some of the points passes through the straight line and all other scatter point are very close to the straight line it has a negative slope which is very close to unity.
Strong negative correlation

In_____the points are deviated from each other so that each of the scatter points are for the depart from each other and the association is weak.
Weak positive correlation

In a_____, there are serious deviations of scatter points and the points slope downward
Weak negative correlation

When the scatter point at random did not form any regular pattern for recognization by any straight line it is called_____
No correlation

Two variables can either be_____or negatively correlated.
Positively

Two variables can either be positively or _____correlated.
Negatively

The relationships among business variables can simply be identified using_____.
correlation coefficients

_____refers as the ratio of covariance between the related variables to the square root of the product of individual variance.
Coefficient of correlation

The ratio of covariance between the related variables to the square root of the product of individual variance is called_____
Coefficient of correlation

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The relationships among business variables can simply be identified using _____coefficients.
Correlation

The relationships among business variables can simply be identified using correlation_____.
Coefficients

_____variables can either be positively or negatively correlated.
Two

_____correlation is used to determine the extent at which the variable are correlated.
Rank

_____ is used to determine the extent at which the variable are correlated.
Rank correlation

_____indicates no rank correlation.
Zero

_____can be defined as the relationship between two or more variables.
Regression analysis

The relationship between two or more variables is called_____
Regression analysis

A_____is defined as a listing in tabular form of the value payoffs associated with all possible actions under every state of nature in a decision problem.
Payoff table

The payoff table is usually displayed in_____form
Grid

A decision-making procedure, which employs both the payoff table and prior probabilities associated with the states of nature to arrive at a decision is referred to as the_____decision procedure.
Expected Monetary Value

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_____mean probabilities representing the chances of occurrence of the identifiable states of nature in a decision problem prior to gathering any sample information.
Prior probability

Decision makers are generally interested in the _____
optimal monetary value decisions

The_____refers to the selection of available action based on either the expected opportunity loss or the expected profit of the action.
expected monetary value decision

_____ is a scientific method which is used for collecting, summarizing, classifying, analyzing and presenting information in such a way that we can have thorough understanding of the reality the information represents.
Statistics

_____ uses statistics as a tool for collecting data on economic aggregates such as national income, savings, consumption and gross national product.
Government

Government uses statistics during census.
True

You conduct a hypothesis test and you observe values for the sample mean and sample standard deviation when n = 25 that do not lead to the rejection of . You calculate a p-value of 0.0667. What will happen to the p-value if you observe the same sample mean and standard deviation for a sample > 25?
decrease

For the chi-square test to be effective, the expected value for each cell in the contingency table has to be at least_____
5

For t distribution, increasing the sample size, the affect will be on_____
All the options

If we reject the null hypothesis, we might be making_____
TypeI Error

In a regression, that the standard error of the regression is, the greater the accuracy of the prediction will be_____

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Smaller

The regression line is drawn so that_____
The sum of the squared errors is as small as possible

The percent of total variation of the dependent variable Y explained by the set of independent variables X is measured by_____
Coefficient of Determination

If the coefficient of determination is 0.81, the correlation coefficient_____
could be either \(+ 0.9 or - 0.9\)

Suppose men always married women who were 10 percent shorter than they were. The correlation coefficient of the heights of married couples would be_____
1.0 since the height of the man is always predictable from the height of the woman

We measure heights and weights of 100 twenty-year old male college students. Which will have the higher correlation?
Both will have the same correlation

Suppose the correlation coefficient between heights (as measured in feet) versus weight (as measured in pounds) is 0.40. What is the correlation coefficient of height measured in inches versus weight measured in ounces? [12 inches = one foot; 16 ounces = one pound]
0.4

An investigator is studying the relation between the physical and intellectual growth of primary school children (grades 1-6). At each grade level, she notes that the correlation between the height of children and the size of their vocabulary is zero. For all students in the school, the correlation is likely to be
Positive

A summary measure that describes any given characteristic of the population is known as a _____
Parameter

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A sample is formed by selecting one unit at random and then selecting additional units at evenly spaced intervals until the sample has been formed
Systematic

Laspeyre" s index numbers possess_____
Upward bias

Investor wishing to invest N100,000 in one of three possible investment alternatives, A, B, and C is an example of_____
Decision making under uncertainty

The mean of a distribution is 23, the median is 24, and the mode is 25.5. It is most likely that this distribution is_____
Negatively Skewed

The mean of a distribution is 14 and the standard deviation is 5. What is the value of the coefficient of variation?
0.357

The mean deviation of the series \(a, a + d, a +2d \cdots + 2n\) from its mean is_____
n (n +1) d /2n +1

A student obtained the mean and the standard deviation of 100 observations as 40 and 5.1. It was later found that one observation was wrongly copied as 50, the correct figure being 40. Find the correct mean and the S.D
Mean = 39.9, S.D =5

For a negatively skewed distribution, the correct inequality is_____
Mean

What percentage of values is greater the 3rd quartile?
0.25

Which of the following is a unit less measure of dispersion?
Coefficient of variation

Individual data is another wise called as _____
raw data

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The data given as 5, 7, 12, 17, 79, 84, and 91 will be called as_____
An individual series

Which of the following example does not constitute an infinite population?
Population of heights of 15 year old children.

In a web-based survey, customers are asked to rate your company" s product on the following scale: Excellent, good, average, poor. The above scale is _____
ordinal

Range of 8, 12, 5, 15 is _____
10

Consider a set of data on monthly sales of a company" s product, the mean of which was found to be N240,000; the mode found to be N135,000; and the standard deviation found to be N85,000. The Pearson" s No. 1 Coefficient of skewness would be____
1.24

The payoffs associated with each possible outcome in a decision problem should be listed in _____ table
Payoff

The measure of dispersion that ensures highest degree of reliability is _____
Standard deviation

Out of all measures of dispersion, the easiest one to calculate is_____
Range

Indicators which reflect the relative changes in the level of certain phenomenon in any given period are _____
Index numbers

The most common index numbers are _____
Price index numbers

Individual data can also be called ____ data
Raw

Data which are collected by someone else or some organization either in published or unpublished forms is called _____ data

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Secondary

When an investigator uses questionnaire to collect data from group of people in a population, such data is called _____data
Primary

Data collected from CBN website are called _____
Secondary

A summary measure that describes any given characteristic of the population is known as a _____
Parameter

Sampling is simply a process of learning about the_ on the basis of a sample drawn from it
Population
The degree of randomness of selection would depend upon the process of selecting the items from the _____
Sample

_____provides various types of statistical information of either Qualitative or quantitative nature
Sampling

Purposive samples can be occasionally referred to as _____ samples
Judgment

If wale predicts that value of 50kg bag of rice will rise in 2022 based on past year (2016) and present year (2019), wale assumption is based on _____
Forecast

Method of forecasts used to generate the general picture (or trend) behind a set of data or time series is _____
Moving average

Forecasts that concern the distant future are _____ forecasts
Long-term

Forecasts based solely on past and present values of the variable to be forecast is called_____forecasts
Extrapolation

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Forecasts concerning the near future are known as _____ forecasts
Short-term

Where T.S.S is 172.5 and W.S.S.S is 125.5, B.S.S.S will be _____
47

The chi-square goodness-of-fit test is be used to test for _____
Normality

The chi-square test is not very effective if the sample is _____
Simple

In null hypothesis for a Chi-square test, both variables are _____
Independent

The degrees of freedom for the test statistic for μ when σ is unknown is _____
N-1

ANOVA means _____
Analysis of variance

Under coefficient of correlation, When r = 0 i.e. there is_____relationship
No

Under correlation coefficient, When r = +1, there is a _____linear relationship
Perfect positive

Correlation is used to determine the extent at which the variable are correlated is called_____ correlation
Rank

The mathematical method of determined the points estimate of „a" and „b" from the available sample points is called _____ method
Least square

Multiple regression is also known as _____ regression
Non linear

In simple linear regression, the numbers of unknown constants are _____
2

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The method of least squares dictates that we choose a regression line where the sum of the square of deviations of the points from the line is _____
Minimum

Hypothesis testing starts with a statement about population parameters such as _____
Mean

The conjectural statement a postulate, or a proposition about an assumed relationship between two or more variables is known as _____
Hypothesis

Scale that has all the properties of the nominal, ordinal and interval scales including the additional property of having an absolute zero point is known as _____ scale
Ratio

Variables that assume any value within an interval or have the property of infinite divisibility are _____ variables
Continuous

Housing unit, number of students in a class, number of goals scored and number of cars are examples of _____ variable
Discrete

Variables whose values are given as numerical quantities is called _____ variables
Quantitative

The measure of the degree of uniformity of observations in a given set of data can be said to be _____
Variation

Like other quartiles, the median quartile is at what percent mark:_____%
50

ANOVA can be classified in_____ways
2

_____is value of the sample statistic which is taken as an approximation of the parameter value

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Estimate

_____refers to the formula or statistic which has been chosen to provide an estimate of the population value
An estimator

The branches of statistics that deals with mutual dependence or inter-relationship of two or more variables is
Correlation

If the points on the scatter diagram show no tendency either to increase together or decrease together the value of r will be close to _____
0

Analysis of Variance (ANOVA) is a test for equality of _____
Variances

A method that involves conference techniques by which a group of people attempts to find solution for specified problems is known as _____
Brain storming

A logical approach used in an investigation to indicate possible alternatives or choices from which an acceptable solution may be derived is called
Critical examination

The mean of a distribution is 14 and the standard deviation is 5. What is the value of the coefficient of variation?
0.357

The mean deviation of the series \(a, a + d, a +2d \cdots + 2n\) from its mean is_____
n (n +1) d /2n +1

A student obtained the mean and the standard deviation of 100 observations as 40 and 5.1. It was later found that one observation was wrongly copied as 50, the correct figure being 40. Find the correct mean and the S.D
Mean = 39.9, S.D =5

For a negatively skewed distribution, the correct inequality is_____
Mean

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What percentage of values is greater the 3rd quartile?
0.25

Which of the following is a unit less measure of dispersion?
Coefficient of variation

Individual data is another wise called as _____
raw data

The data given as 5, 7, 12, 17, 79, 84, and 91 will be called as_____
An individual series

Which of the following example does not constitute an infinite population?
Population of heights of 15 year old children

The values of (xi,yi) are given as (1,2), (2,4), (3,8), (4,7), (5,10), (6,5), (7,14), (8,16), (9,2), (10,20) find the value of summation yi
88

The values of (xi,yi) are given as (1,2), (2,4), (3,8), (4,7), (5,10), (6,5), (7,14), (8,16), (9,2), (10,20) find the value of summation xi
55

A graphical method of showing correlation between two variables is called_____
scatter diagram

When the correlation coefficient r, equals zero, then____
There's no correlation

Correlation values ranges from_____
-1 to 1

Distributions involving two discrete variables are called_____
bivariate distributions

Distributions in which there are only one variable are called_____
univariate distributions

Data collected on a particular variable or set of variables over time is called_____

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Time Series Data

Compute the harmonic mean of 5, 6 and 7. The answer is_____
5.58

The second quartile is equivalent to the_____
Median

The boundaries separating the items in a given distribution into quarters are called_____
Quartiles

What is the range of the data 5, 2, 2, 3, 7, 8, 18, 1 ?
17

The difference between the highest observation and the lowest observation is called_____
the range

Variables whose values are fractional and are points on an internal are called_____
continuous variables

Variables whose values are whole numbers or integers are called_____
whole variables

A bus starts with 6 people and stops at 10 different stops, how many different ways can the 6 people depart if any passenger can depart at any bus stop ____
1000000

Any characteristics of an object that is capable of assuming different values is called____
Variable

The second quartile is equivalent to the_____
Mean

The boundaries separating the items in a given distribution into quarters are called_____
quartiles

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The_____method provides a sound mathematical basis for choosing the best trend line

least – squares

The idea behind the use of trend lines in forecasting is based on the assumption that_____

the general picture underlying a given set of data can be reasonably approximated by a straight line.

_____occur naturally in all spheres of business activity.

Time series

Time series occur naturally in all spheres of_____activity.

business

Time series occur naturally in all spheres of business activity.

True

_____can be used to generate the general picture (or trend) behind a set of data or time series.

Moving averages

There are generally_____methods of forecasting

Two

_____are forecasts concerning the near future.

Short-term Forecasts

_____forecasts concern the distant future. They are characterized by more uncertainties than short – term

Long – term

_____are forecasts based solely on past and present values of the variable to be forecast.

Extrapolation

_____are based on past performances.

Forecasts

Forecasts are based on_____.

past performances

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