BRAINWARE UNIVERSITY
Term End Examination 2020 - 21
Programme – Master of Business Administration
Course Name – Business Statistics and Analytics for Decision Making
Course Code - MBA107
Semester / Year - Semester I

Time allotted : 75 Minutes

Full Marks : 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)   1 x 60=60

1.   *(Answer any Sixty)*

(i) If a distribution is left skewed then

a) Mean >Median> Mode

b) Mean<Median>Mode

c) Mean < Median < Mode

d) Mean = Median = Mode.

(ii) In a cumulative frequency distribution, the last number will have a cumulative frequency equal to

a) 1

b) 100

c) ? f

d) none

(iii) A researcher is gathering data from four geographical areas designated:
South = 1; North = 2; East = 3; West = 4. The designated geographical regions represent

a) qualitative data

b) quantitative data

c) label data

d) either quantitative or qualitative data

(iv) The variable "Gender" can be regarded as being, in general

a) qualitative and ratio level

b) quantitative

c) qualitative and nominal level

d) qualitative and ordinal level

(v) Variables whose measurement is done in terms of weight, height and length are classified as

a) continuous variables

b) measuring variables

c) flowchart variables

d) discrete variables

(vi) The type of variable which can take fixed integer values is classified as

a) Flowchart variable

b) Discrete variable

c) Continuous variable

d) Measuring variable

(vii) The type of variable which can take any numerical figure for calculation is classified as

a) Continuous variable

b) Measuring variable

c) Flowchart variable

d) Discrete variable

(viii) A numerical value used as a summary measure for a sample, such as a sample mean, is known as a

a) Population Parameter

b) Sample Parameter

c) Sample Statistic

d) Population Mean

(ix) Statistics branches include

a) Applied Statistics

b) Mathematical Statistics

c) Industry Statistics

d) Both Applied Statistics and Mathematical Statistics

(x) A method used to examine inflation rate anticipation, unemployment rate, and capacity utilization to produce products is classified as

a) Data Exporting Technique

b) Data Importing Technique

c) Forecasting Technique

d) Data Supplying Technique

(xi) What is the difference between interval/ratio and ordinal variables?

a) The distance between categories is equal across the range of interval/ratio data.

b) Ordinal data can be rank ordered, but interval/ratio data cannot.

c) Interval/ratio variables contain only two categories.

d) Ordinal variables have a fixed zero point, whereas interval/ratio variables do not.

(xii) What does the term 'outlier' mean?

a) A score that is left out of the analysis because of missing data

b) The arithmetic mean

c) type of variable that cannot be quantified

d) An extreme value at either end of a distribution

(xiii) What is meant by a "spurious" relationship between two variables?

a) One that is so ridiculously illogical it cannot possibly be true.

b) An apparent relationship that is so curious it demands further attention.

c) A relationship that appears to be true because each variable is related to a third one.

d) One that produces a perfect negative correlation on a scatter diagram.

(xiv) Number of observations are 30 and value of arithmetic mean is 15 then sum of all values is

a) 15

b) 450

c) 200

d) 45

(xv) In arithmetic mean, sum of deviations of all recorded observations must always be

a) 2

b) -1

c) 1

d) 0

(xvi) If quartile range is 24 then quartile deviation is

a) 48

b) 12

c) 24

d) 72

(xvii) In two units of company, employees in unit one are 650 and monthly salary is $2750, employees in unit two are 700 and monthly salary is $2500 then combined arithmetic mean is

a) $2,620

b) $2,520

c) $2,420   d) $2,320

(xviii) In quartiles, central tendency median to be measured must lie in

   a) first quartile   b) second quartile

   c) third quartile   d) four quartile

(xix) When data is arranged, middle value in set of observations is classified as

   a) median   b) mean

   c) variance   d) standard deviation

(xx) Per day wage of 15 employees of different departments is as 620, 640, 750, 850, 650, 720, 730, 785, 630, 740, 900, 880, 780, 690, 850 then value of x? is

   a) 647.67   b) 947.67

   c) 847.67   d) 747.67

(xxi) Service time (in minutes) at airport ticket counter is as 4.5, 5.5, 6, 7, 8, 8.5, 4, 3, 3.5, 2.5, 3.8 then median of data is

   a) 3.8   b) 4.5

   c) 4   d) 4.75

(xxii) For individual observations, reciprocal of arithmetic mean is called

   a) geometric mean   b) harmonic mean

   c) deviation square mean   d) paired mean

(xxiii) Formula of coefficient of range is

   a) L+L?H+H   b) H+H?L+L

   c) H-L?H+L   d) H+l?H-L

(xxiv) If arithmetic mean is multiplied to coefficient of variation then resulting value is classified as

a) coefficient of deviation
b) coefficient of mean

c) standard deviation
d) variance

(xxv) Variability which is defined as difference between third and first quartile is considered as

a) quartile range
b) deciles range

c) percentile range
d) inter quartile range

(xxvi) Which one is the not measure of dispersion?

a) Range
b) Variance

c) Mean
d) Inter-quartile Range

(xxvii) Which of the following is not a measure of dispersion

a) Skewness
b) Mean Deviation

c) Standard Deviation
d) Quartile Deviation

(xxviii) Mean absolute deviation is divided by coefficient of mean absolute deviation to calculate

a) variance
b) median

c) arithmetic mean
d) coefficient of variation

(xxix) In measures of skewness, the absolute skewness is equal to

a) Mean + Mode
b) Mean – Mode

c) Mean + Median
d) Mean – Median

(xxx) What is the probability of an impossible event?

a) 0
b) 1

c) 2
d) 3

(xxxi) For two events, probability of occurrence of both events at same time or occurrence in series is classified as

a) joint probability　　　　　　　　　　b) dependent probability

c) series probability　　　　　　　　　　d) conditional probability

(xxxii) For a random experiment, all possible outcomes are called

a) numerical space　　　　　　　　　　b) event space

c) sample space　　　　　　　　　　　d) both event space and sample space

(xxxiii) We can measure the cause and effect relationship by the help of

a) Time series analysis　　　　　　　　b) Cross-sectional analysis

c) Correlation analysis　　　　　　　　d) Regression analysis

(xxxiv) Time series data have total number of components?

a) 4　　　　　　　　　　　　　　　　b) 5

c) 6　　　　　　　　　　　　　　　　d) 3

(xxxv) 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) None of these

(xxxvi) Which of the following methods should not be used for short-term forecasts into the future?

a) exponential smoothing　　　　　　　b) moving averages

c) linear trend model　　　　　　　　　d) autoregressive modeling

(xxxvii) When a time series appears to be increasing at an increasing rate, such that the percentage difference from observation to observation is constant, the appropriate model to fit is the

a) Linear trend　　　　　　　　　　　b) Quadratic trend

c) Exponential trend　　　　　　　　　d) None of these

(xxxviii) Changes in technology, population, wealth, and value are factors that

potentially result in changes to

a) Seasonal component   b) Irregular component

c) Cyclical component   d) Trend

(xxxix) Which of the following terms describes the up and down movements of a time series that vary both in length and intensity?

a) Irregular component   b) Seasonal component

c) Trend   d) Cyclical component

(xl) Maximum value of correlation is

a) 2   b) 1.5

c) 1   d) 0

(xli) In a regressionanalysis if r2= 1, then

a) SSEmust also be equal to one   b) SSE must be equal to zero

c) SSE can be any positive value   d) SSE must be negative

(xlii) If two variables, xand y, have a very stronglinear relationship, then

a) there is evidence that xcauses a change in y   b) there is evidence that ycauses a change in x

c) there might not be any causal relationship between x and y   d) None of these alternatives is correct

(xliii) Which one of these variables is a continuous random variable?

a) The number of tattoos a randomly selected person has   b) The number of women taller than 68 inches in a random sample of 5 women

c) The time it takes a randomly selected student to complete an exam   d) The number of correct guesses on a multiple choice test

(xliv) The difference between the sample value expected and the estimates value of the parameter is called as?

a) Error   b) Contradiction

c) Difference   d) Bias

(xlv) Any population which we want to study is referred as?
a) standard population   b) final population
c) target population   d) infinite population

(xlvi) The process of making estimates about the population parameter from a sample is called
a) Statistical inference   b) Statistical independence
c) Statistical hypothesis   d) Statistical decision

(xlvii) A single value used to estimate a population values is called
a) Interval estimate   b) Point estimate
c) Level of confidence   d) Degrees of freedom

(xlviii) The level of confidence is denoted by
a) ?   b) ?
c) 1 -?   d) 1 -?

(xlix) A statement made about a population for testing purpose is called?
a) Statistic   b) Hypothesis
c) Level of Significance   d) Test-Statistic

(l) The rejection probability of Null Hypothesis when it is true is called as?
a) Level of Significance   b) Level of Confidence
c) Level of Margin   d) Level of Rejection

(li) Consider a hypothesis H0 where $?0 = 5$ against H1 where $?1 > 5$. The test is?
a) Left tailed   b) Right tailed
c) Center tailed   d) Cross tailed

(lii) The probability of Type 1 error is referred as?

    a) ?   b) 1-?

    c) ?   d) 1-?

(liii) The number of values that are free to vary after we have placedcertain restrictions upon the data is called

    a) Confidence coefficient   b) Number of parameters

    c) Degrees of freedom   d) Number of samples

(liv) If the population standard deviation ? is unknown, and the sample size is small i.e.; n?30, the confidenceinterval for the population mean ? is based on

    a) The normal distribution   b) The binomial distribution

    c) The hypergeometric distribution   d) The t-distribution

(lv) The shape of the t-distribution depends upon the

    a) Sample size   b) Population size

    c) Parameters   d) Degrees of freedom

(lvi)

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

    a)   b)

    60.4 %   48.3 %

    c)   d)

    35.7 %   27.8 %

(lvii)

Given the heights (in cm) of two groups of students:

Group A: 131 cm, 150 cm, 147 cm, 138 cm, 144 cm

Group B: 139 cm, 148 cm, 132 cm, 151 cm, 140 cm

Which of the following is / are the true?

a)

b)

The ranges of the heights of the two groups of students are the same.

The means of the heights of the two groups of students are the same.

c)

d)

The inter-quartile ranges of the heights of the two groups of students are the same.

None of these

(lviii)

If the correlation coefficients 0.8, the percentage of variation in the response variable explained by the variation in the explanatoryvariable, is

a)

b)

0.80%

80%

c)

d)

0.64%

64%

(lix)

Suppose that vehicle speeds at an interstate location have a normal distribution with a mean equal to 70 mph and standard deviation equal to 8 mph. What is the z-score for a speed of 64 mph?

a)

b)

+0.75

?0.75

c)

?6

d)

+6

(lx)

If the observations are paired and the number of pairs is n, then degree of freedomis equal to

a)

n

b)

n −1

c)

$n_1 + n_2 - 2$

d)

n/2