BRAINWARE UNIVERSITY

Term End Examination 2022
Programme – BBA-2018/BBA-2019/BBA(HM)-2019/BBA-2020/BBA(HM)-2020/BBA-2021/BBA(HM)-2021/BBA(DM)-2021/BBA-2022/BBA(DM)-2022
Course Name – Statistics for Business Decisions
Course Code - BBAD010404/BBAC102/BBAHMC102/BBADMC102
(Semester I)

Full Marks : 60   **Time : 2:30 Hours**

[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 15=15

1. *Choose the correct alternative from the following :*

(i)   Select the data type that represents different categories which can be rank ordered.

 a) Ratio   b) Interval
 c) Ordinal   d) Nominal

(ii)   Middle value of an ordered array of numbers is defined as?

 a) Mean   b) Mode
 c) Median   d) Interquartile Range

(iii)   Which of these statistic describes the spread of the data by dividing it into 4 equal parts?

 a) Range   b) Quartiles
 c) Percentiles   d) Deciles

(iv)   Identify the data type that the variable "Gender" will generate?

 a) Ratio   b) Interval
 c) Ordinal   d) Nominal

(v)   The heights of students in a college will be represented by which data type?

 a) Qualitative   b) Discrete
 c) Continuous   d) None of the above

(vi)   Select the outlier in the following observations : 8, 10, 7, 30.

 a) 7   b) 8
 c) 10   d) 30

(vii)   Compute the median from the following data: 160, 180, 200, 280, 300, 320, 400.

 a) 200   b) 280
 c) 300   d) 320

(viii)   Compute the mode from the following data: 10, 11, 11, 10, 12, 13, 14, 10.

 a) 10   b) 11

c) 12 d) 13

(ix) Compute the interquartile range of the following data: 0, 25, 50, 75, 100.

a) 25 b) 50

c) 70 d) None of the above

(x) If the Arithmetic Mean and Harmonic Mean of two numbers are both equal to 5. Calculate the Geometric Mean.

a) 25 b) 5

c) 10 d) Cannot conclude from the given information

(xi) Infer which of these diagrams gives the 5 number summary of a data set.

a) Bar Diagram b) Frequency Polygon

c) Ogive d) Box Plot

(xii) When we have nominal data choose the measure of central tendency that CAN BE calculated.

a) Mean b) Median

c) Mode d) Cannot be calculated from the information given.

(xiii) When the relationship between two variables is highly non-linear choose the best measure that captures their degree of association.

a) Pearson's Correlation coefficient b) Spearman's Correlation

c) Regression slope d) None of the options given above

(xiv) Propose the most apt mean when we are averaging returns on investment over years.

a) Arithmetic Mean b) Geometric Mean

c) Harmonic Mean d) All are equally good

(xv) Speculate the best measure of dispersion to use while comparing two variables measured in different units.

a) Coefficient of Variation b) Variance

c) Range d) Interquartile Range

Group-B
(Short Answer Type Questions) 3 x 5=15

2. Given the following frequency distribution of the variable 'preference' construct a bar diagram (3)

Preference	Frequency
Totally disagree	2
Somewhat disagree	3
Indifferent	10
Somewhat agree	4
Totally agree	3

3. Given the following frequency distribution of the variable 'gender' construct a pie diagram. (3)

Gender	Frequency
Male	30
Female	20

4. Describe the different data types with examples for each categories. (3)

5. There are 5 red and 3 green balls. Two balls are selected one by one without replacement. (3)

Calculate the probability that the first is red and the second is green.

6. Justify the use of Mean over Median or Mode when the data is symmetric and has no outliers. (3)

OR

Justify the superiority of Standard Deviation over Interquartile Range. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Given the data below calculate the regression coefficients of the trend line using the least squares method. (5)

GDP (In Rs. Lakh Crores)	Year
100	2015
105	2016
115	2017
120	2018
130	2019
150	2020
180	2021
200	2022

8. Given the following data on gender-wise classification of 250 1st time and repeat offenders of shoplifting from a store. Calculate the marginal and joint probabilities. Calculate the probability that a shoplifter will be a repeat offender given that the person is a female. (5)

Gender	1st Time	Repeat	Total
Male	60	70	130
Female	44	76	120
Total	104	146	250

9. State the components of time series data and give an example for each. (5)
10. Explain the basic difference between correlation and regression. Is there any similarity/dissimilarity between the two? (5)
11. Assume that Annual Profit depends on R&D Expense. Calculate the regression coefficients given the data below. (5)

Year	R&D Expense	Annual Profit
1990	2	20
1991	3	25
1992	5	34
1993	4	30
1994	11	40
1995	5	31

12. Compare and contrast the measures of central tendency. (5)

OR

Compare and contrast Fisher's Ideal Index with Laspeyre's and Paache's Index. (5)

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