BRAINWARE UNIVERSITY

Term End Examination 2022
Programme – MBA-2018/MBA-2020/MBA-2021/MBA-2022
Course Name – Business Statistics and Analytics for Decision Making
Course Code - MBAD010406/MBA107/MBA106
(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) A time series changes at an exact constant percentage then it produce

a) A well-fitted trend line cannot be obtained
b) A linear line fitted to the data gives a perfect fit
c) A linear fit to the logarithms data gives a perfect fit
d) A nonlinear is required to fit

(ii) Data concerning events over a period of time is called a: Infer the nature of data

a) Time Series
b) Frequency Distribution
c) Moving Average
d) Random Sample

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

a) 1
b) 100
c) Sum(f)
d) None of these

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

a) discrete data
b) nominal data
c) Quantitative data
d) either quantitative or qualitative data

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

a) 1
b) 100
c) Sum(f)
d) none

(vi) If a value is missing in a time series, express, what can be done from the following

a) Just copy the previous value
b) Estimate it as an average between two neighboring values
c) take the overall mean as the best estimate of it
d) Ignore it

(vii) Infer the meaning of "spurious" relationship between two variables?

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

(viii) The mean of a distribution is 14 and the standard deviation is 5. Report the value of the coefficient of variation?

a) 0.604
b) 0.483
c) 0.357
d) 0.278

(ix) Explain the difference between a bar chart and a histogram?

a) Bar charts represent numbers, whereas histograms represent percentages.
b) A histogram does not show the entire range of scores in a distribution
c) There are no gaps between the bars on a histogram.
d) Bar charts are circular, whereas histograms are square.

(x) If x = 2y. Compute the Pearsonâ€™s Correlation Coefficient between x and y.

a) -1
b) 0
c) 1
d) Cannot say from given information

(xi) Compute the standard deviation from the following data: 2, 4, 3.

a) 0.57
b) 0.67
c) 0.77
d) 0.82

(xii) When analyze a statement validity, we test it based on a sample then it is called as?

a) Statistical Hypothesis
b) Null Hypothesis
c) Composite Hypothesis
d) Simple Hypothesis

(xiii) Devise the rejection probability of the Null Hypothesis when it is true

a) Level of Significance
b) Level of Confidence
c) Level of Margin
d) Level of Rejection

(xiv) Number of patients who visited cardiologists are as 63, 57, 51, 65 in four days then estimate absolute mean deviation (approximately) is

a) 4 Patients
b) 8 Patients
c) 10 Patients
d) 12 Patients

(xv) If quartile range is 24 then evaluate the quartile deviation

a) 48
b) 12
c) 24
d) 72

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Describe the difference between what a measure of central tendency tells us and what a measure of variability tells us? (3)

3. (3)

There are two units of an automobile company in two different cities employing 760 and 800 persons, respectively. The arithmetic means of monthly salaries paid to persons in these two units are Rs. 18,750 and 16,950, respectively. Compute the combined arithmetic mean of salaries of the employees in both the units.

4. Construct a stem-and-leaf display, given the following data from a sample of midterm exam scores in finance: (3)

54 69 98 93 53 74

5. The following set of data represents the temperature high for seven consecutive days in February in Chicago: 22, 14, 26, 27, 35, 38, and 41. (3)

Select the most appropriate measure of central tendency for the data described and calculate.

A) Mean

B) Median

C) Mode

D) Midrange

6. A supplier shipped a lot of six parts to a company. The lot contained three defective parts. Suppose the customer decided to randomly select two parts and test them for defects. How large a sample space is the customer potentially working with? Justify the sample space. (3)

OR

Compile the difference between point estimate and interval estimate? (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Which of the following probability distribution is most likely the appropriate one to use for the following variables: Binomial, Poisson or Normal. Identify. (5)

i) Life span of a female born in 1977

ii) The number of autos passing through the a tollbooth

iii) The number of defective radios in a lot of 100

iv) Average rainfall in a month

v) Tossing of a coin

8. The linear trend forecasting equation for an annual time series containing 22 values (from 1989 to 2010) on total revenues (in millions of dollars) is Y= 4.0+1.5x.Interpret the Y intercept and the slope. (5)

9. (5)

Calculate Quartile Deviation and its coefficient from the following data:

Marks	80	70	60	50	40	30	20	10
No of students	100	90	80	60	32	20	13	5

10. A business firm receives on an average 2.5 telephone calls per day during the time period 10am to 10.05am. Calculate the probability that on a certain day, the firm receives i) no call; ii) exactly 4 calls. (5)

11. The two regression lines involving the two variables x and y are $Y = 5.6 + 1.2x$ and $X = 12.5 + 0.6y$. Calculate their *Correlation Coefficient* (5)

12. A corporation owns several companies. The strategic planner for the corporation believes dollars spent on advertising can to some extent be a predictor of total sales dollars. As an aid in long-term planning, she gathers the following sales and advertising information from several of the companies for 2009 ($ millions). (5)

Advertising	Sales
12.5	148
3.7	55
21.6	338
60.0	994
37.6	541
6.1	89
16.8	126
41.2	379

Evaluate the equation of the simple regression line to predict sales from advertising expenditures using these data.

OR

Judge the relation between confidence interval and confidence limit? (5)

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