



BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – MBA-2020/MBA-2022/MBA-2023

Course Name – Business Statistics and Analytics for Decision Making

Course Code - MBA107/MBA106

(Semester I)

Library
Brainware University
393, Ramkrishna Sarab Road, Barasat
Kolkata, West Bengal-700125

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) Define the function of a contingency table in the context of bivariate analysis.
 - a) It shows the results you would expect to find by chance.
 - b) It summarizes the frequencies of two variables so that they can be compared.
 - c) It lists the different levels of p value for tests of significance.
 - d) It compares the results you might get from various statistical tests.
- (ii) Select which one of the following is a measure of dispersion
 - a) Median
 - b) Skewness
 - c) Standard Deviation
 - d) Mean
- (iii) Recognise the overall upward or downward pattern in an annual time series would be contained in which component of the times series
 - a) Trend
 - b) Cyclical
 - c) Seasonal
 - d) irregular
- (iv) Describe the possible correlation between income and demand is
 - a) Positive
 - b) Negative
 - c) No
 - d) Perfect positive
- (v) Interpret the meaning of correlation and select the correct option
 - a) the association between two variables
 - b) Linear association between two variables
 - c) the proportion of variance that two variables share
 - d) Effect of one variable on the other
- (vi) Identify the variable that is being predicted In regression analysis
 - a) response, or dependent, variable
 - b) independent variable
 - c) intervening variable
 - d) interval variable
- (vii) If the correlation coefficient is a positive value, then relate it with the slope of the regression line
 - a) must also be positive
 - b) can be either negative or positive
 - c) can be zero
 - d) cannot be zero
- (viii) Determine the type of statistic which will NOT be affected by outliers?
 - a) Mean
 - b) Median
 - c) Standard Deviation
 - d) Range
- (ix) Two unbiased coins are tossed. Examine the probability of getting at most one head?
 - a) 1/3
 - b) 2/3
 - c) 1/6
 - d) 3/4
- (x) For two events, judge the 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
- (xi) Select the option that represent the probability of Type 1 error
 - a) Alpha
 - b) 1 - Alpha
 - c) Beta
 - d) 1 - Beta
- (xii) Infer the correct option If a hypothesis is rejected at the 1% level of significance?
 - a) will always be rejected at the 5% level
 - b) may be rejected or not rejected at the 5% level
 - c) will always be accepted at the 5% level
 - d) will never be tested at the 5% level
- (xiii) The number of values that are free to vary after we have placed certain restrictions upon the data is infer as
 - a) Confidence coefficient
 - b) Number of parameters
 - c) Degrees of freedom
 - d) Number of samples
- (xiv) 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? Recommend

- a) The mean of the heights of the two groups of students are the same. b) The inter-quartile ranges of the heights of the two groups of students are the same.
- c) The ranges of the heights of the two groups of students are the same. d) None of the above
- (xv) Select from the options that the measure of Dispersion can never be
- a) 0 b) Positive
- c) Negative d) None

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. Explain stratified sampling technique. (3)
4. Describe the central measures of tendency. (3)
5. Differentiate between less than and more than ogive. (3)
6. Statistical techniques are classified into two major categories: descriptive and inferential. Differentiate the general purpose of each category. (3)

OR

Define and explain point estimation.

(3)

Group-C
(Long Answer Type Questions)

5 x 6=30

7. Estimate Mean and Median for the following frequency distribution: (5)

Sales (in unit)	53-56	57-60	61-64	65-68	69-72	73-76
Number of days	2	4	5	4	4	1

For many years ICICI has been a leading Indian bank. Use the five force model to assess the industry forces ICICI faces. |

8. Some researchers in understanding g-loads on humans are interested in methods that can be used to assist pilots to withstand g-load. To study this in a controlled environment, they need to develop a standardized way to safely measure g-loads in the research participants. One way that they can do this is to have participants experience a g-load and give them a simple calculation to perform. This was repeated three times for each participant and the results are shown in the table below. Calculate the mean, mode, and median for each. (5)

Attempt 1	35	39	38	30	37	43	30	38	41	52	25	44
Attempt 2	20	28	26	29	60	21	37	30	28	57	29	25
Attempt 3	45	23	57	50	47	52	20	53	50	30	52	60

9. A ketchup manufacturer is in the process of deciding whether to produce a new extra spicy brand. The company's marketing research department used a national survey of 6000 households and found that the extra spicy ketchup would be purchased by 335 of them. A much more extensive study made two years ago showed that 5% of the households could purchase the brand then. At 5% significance level, should the company conclude that there is an increased interest in the extra spicy flavour? Decide. (Z value is 1.96 at 5% significance level). (5)
10. How is kurtosis different from skewness in terms of describing a data distribution? Justify the answer. (5)
11. Judge the relation between confidence interval and confidence limit? (5)
12. Explain the meaning of central tendency? Name the various methods of measuring it. Also explain their methods of solution with example. (5)

An analysis of weekly wages paid to workers in two firms A and B gives the follow (5)
OR

	A	B
No of Workers	60	80
Average wages	300	350
Standard Deviation	40	45

In which firm there is a greater variability of wages?

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