

Indian Maritime University

(A Central University, Govt of India)

End Semester Examinations – December 2023

Programme Name: BBA (ML)

Semester: I

Subject Code: UG32T1102

Subject Name: BUSINESS STATISTICS

Date: 18.12.2023	Max Marks: 70
Duration: 03 Hrs	Pass Marks: 35

General Instructions

- (i) All Sections (A, B & C) are to be attempted.

Section A

Answer the following compulsory questions (MCQs) (10 X 01= 10Mark)

1. Which of the following is an example of primary data collection method?

- A) Surveying existing research papers B) Conducting interviews
C) Analysing government reports D) Reviewing historical records

2. What is the primary purpose of data collection in statistics?

- A) To summarize existing knowledge
B) To draw conclusions and make informed decisions
C) To conduct experiments D) To perform data analysis

3. Which of the following dispersion measures is sensitive to outliers in the data?

- A) Range B) Quartile Deviation
C) Mean Deviation D) Standard Deviation

4. Which regression technique is suitable for predicting a categorical outcome variable?

- A) Simple linear regression B) Multiple linear regression
C) Logistic regression D) Polynomial regression

5. When is a correlation coefficient considered statistically significant?

- A) When it is greater than 0.5 B) When it is less than -0.5
C) When its p-value is less than the chosen significance level (e.g., 0.05)
D) When it is exactly 1.0

6. A Fisher price index is used to:
- Measure the average price change of a fixed basket of goods and services
 - Combine the Laspeyres and Paasche price indices to reduce bias
 - Calculate the unemployment rate
 - Measure the inflation rate in developing countries
7. What is the primary purpose of an index number in economics and statistics?
- To measure the absolute value of a variable
 - To compare the relative changes in a variable over time
 - To calculate the average of a set of data
 - To determine the median of a distribution
8. What is the coefficient of range for a dataset?
- $(Q3 - Q1) / 2$
 - $(Q3 - Q1) / (Q3 + Q1)$
 - $(Q3 - Q1) / (Q3 * Q1)$
 - $(Q3 - Q1) / (Q3 * Q3)$
9. In which measure of dispersion is the coefficient always expressed as a percentage?
- Range
 - Quartile Deviation
 - Mean Deviation
 - Standard Deviation
10. In an Ogive, if the cumulative frequency at a given percentile is 75, what does this value indicate?
- The value at that percentile is 75
 - 75% of the data falls below that percentile
 - 75% of the data falls above that percentile
 - The dataset is multimodal

Section B

Answer the following compulsory short questions (05 X 2 = 10 Marks)

- Explain the different methods of collecting primary data?
- Define mode. When is mode said to be ill-defined?
- How is the coefficient of variation (CV) calculated?
- Explain the difference between Dispersion and Skewness?
- What is meant by Consumer Price Index?

Section C

Answer any five of the following questions (05 X 10 = 50 Marks)

- Explain the importance of Statistics with respect to business and industry?

17. Distinguish between primary and secondary data. What precautions should be taken in the use of secondary data?
18. Calculate mean deviation from the median for the following data:
 Marks less than: 80 70 60 50 40 30 20 10
 No. of Students: 100 90 80 60 32 20 13 5
19. Define correlation. Discuss its significance. Does correlation always signify causal relationship between two variables? Explain with illustration?
20. Find Karl Pearson's coefficient of correlation between sales and expenses of the following ten firms:
- | | | | | | | | | | | |
|-------------------------|----|----|----|----|----|----|----|----|----|----|
| Firm : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Sales ('000 units): | 50 | 50 | 55 | 60 | 65 | 65 | 65 | 60 | 60 | 50 |
| Expenses ('000 rupees): | 11 | 13 | 14 | 16 | 16 | 15 | 15 | 14 | 13 | 13 |
21. What is an index number? Explain the various problems involved in the construction of index numbers?
22. Cost of living index number is essentially a consumer price index." Discuss. State the important steps involved in its construction. What are its uses?
