LCCI Level 2 in Business and Statistics

Group 1 – select 20 questions (4 marks each)

Group 2 – select 10 questions (2 marks each)

TOTAL MARKS = 100 marks

Group 1 – select 20 questions (4 marks each)

Question 1: (MCQ)

What is the main purpose of planning for data collection?

A) To ensure that data is collected randomly without any specific criteria
B) To establish a clear framework for gathering relevant and accurate data
C) To minimize the time spent on data analysis
D) To avoid the use of technology in data gathering

Answer: B) To establish a clear framework for gathering relevant and accurate data

Question 2: (MCQ)

What is the difference between a primary source and a secondary source of business data?

A) Primary sources are always more reliable than secondary sources.
B) Primary sources are original data collected first-hand, while secondary sources are interpretations or analyses of primary data.
C) Primary sources are only quantitative, while secondary sources are only qualitative.
D) Primary sources are used exclusively in academic research, while secondary sources are used in business.

Answer: B) Primary sources are original data collected first-hand, while secondary sources are interpretations or analyses of primary data.

Question 4: (MCQ)

What is the role of stratification in sample design?

A) To ensure that every individual in the population has an equal chance of being selected.
B) To divide the population into distinct subgroups to improve the accuracy and representativeness of the sample.
C) To eliminate the need for random sampling techniques.

D) To increase the overall sample size without considering population characteristics.

Answer: B) To divide the population into distinct subgroups to improve the accuracy and representativeness of the sample.

Question 8: MCQ

How can you interpret a graph that shows the cumulative frequency curve for a set of data?

A) The curve indicates the total number of observations below a certain value.

B) The curve shows the average value of the dataset.

C) The curve represents the mode of the dataset.

D) The curve displays the range of the dataset.

Answer: A) The curve indicates the total number of observations below a certain value.

Question 10: (MRQ) –

Question: How do you calculate the mean deviation for ungrouped data? (Select all that apply)

A) Find the range of the data set.

B) Calculate the absolute deviations of each data point from the mean.

C) Find the difference between the absolute deviations.

D) Divide the sum of the absolute deviations by the number of data points.

E) Square the deviations before summing them.

Answer: B, D

Question 11: (MCQ)

What is the first step in calculating the median for ungrouped data?

A) Arrange the data in ascending order
B) Calculate the mean
C) Find the mode
D) Count the number of data points

Answer: A) Arrange the data in ascending order

Question 14: (MCQ)

Which of the following statements about standard deviation is true?

A) Standard deviation measures the average of a set of values.
B) A smaller standard deviation indicates that the data points are more spread out from the mean.
C) Standard deviation can never be negative.
D) Standard deviation is only applicable to categorical data.

Answer: C) Standard deviation can never be negative.

Question 16: (MCQ)

What is the primary purpose of a histogram?

A) To display the relationship between two variables.
B) To show the frequency distribution of a set of continuous data.
C) To summarize categorical data in a visual format.
D) To calculate the mean and median of a data set.

Answer: B

Question 17: (MCQ)

The ages of four friends are 22, 25, 27, and 30. What is the mean age of the friends?

A) 24
B) 25
C) 26
D) 27

Answer: 26.

Question 18: (MCQ)

What is the primary purpose of a cumulative frequency curve?

A) To display the relationship between two categorical variables.
B) To show the total number of observations below a particular value in a data set.
C) To represent the mean and median of a data set visually.
D) To compare the frequencies of different categories in a data set.

Answer:

The correct answer is B

Question 19: MCQ

What does the quartile deviation measure in a data set?

A) The average of the data points

B) The spread or dispersion of the middle 50% of the data

C) The total number of data points

D) The maximum value in the data set

Answer: B

Question 21: MCQ

What type of correlation occurs when there is a straight-line relationship between two variables?

A) Positive Correlation
B) Negative Correlation
C) Perfect Correlation
D) Linear Correlation

Answer: D) Linear Correlation

Question 22: (MCQ)

What is the primary difference between a response variable and an explanatory variable in statistical analysis?

A) The response variable is the one that is manipulated by the researcher, while the explanatory variable is measured to see how it is affected.

B) The response variable is the outcome that is measured in an experiment, while the explanatory variable is the factor that is believed to influence or explain the response.

C) The response variable is always quantitative, while the explanatory variable is always categorical.

D) The response variable is independent of the explanatory variable, meaning changes in one do not affect the other.

Answer: B

Question 23: (MCQ)

What is the purpose of a scatter diagram?

A) To show the relationship between two variables

B) To calculate the correlation coefficient

C) To identify outliers

D) To create a regression equation

Answer: A) To show the relationship between two variables

Question 24: MRQ

What are the three main components of a time series?

A) Scale

B) Seasonality

C) Irregularity

D) Cyclical

Answer: B) Seasonality, C) Irregularity

Question 25: (Insert values)

A company has the following sales figures for the first five months of the year:

- January: $10,000
- February: $12,000
- March: $15,000
- April: $14,000
- May: $16,000

What is the 3-month moving average for sales at the end of May?

Answer: $15000

Question 26: MCQ

What is the additive model used to identify seasonal factors?

A) Multiplicative

B) Additive

C) Seasonal decomposition

D) Exponential smoothing

Answer: B

Question :27 (Fill in blanks)

Match the items in Column A with the correct descriptions in Column B regarding the differences between Laspeyres and Paasche index numbers.

Column A	Column B
1. Paasche Index	A. Uses current period quantities as weights.
2. Laspeyres Index	B. Uses base period quantities as weights.
3. Price Index	C. Typically overstates inflation when prices rise.
4. Quantity Index	D. Typically understates inflation when prices rise.

Question 29: . MCQ

Identify one possible limitation of using regression analysis.

A) It can only be used for linear relationships.
B) It requires a large sample size to produce reliable results.
C) It can accurately predict future outcomes without any errors.
D) It does not account for multi-collinearity among independent variables.

Answer: B

MCQ

Question 37:MCQ

What is the classical definition of probability?

A) The likelihood of an event occurring

B) The frequency of an event occurring

C) The uncertainty of an event occurring

D) The impossibility of an event occurring

Answer: A

Question 38: MCQ

Which of the following events are mutually exclusive?

A) Tossing heads or tails on a coin

B) Rolling odd or even numbers on a die

C) Drawing red or black cards from a deck

D) All of the options

Answer: D

Question 39: MRQ

Identify the types of probability definitions. (Select all correct responses)

A) Classical definition

B) Empirical definition

C) Subjective definition

D) Objective definition

Answer: A) Classical definition, B) Empirical definition

Question 40: MCQ

What are the two main rules for calculating probabilities? (Select all correct responses)

A) Addition rule

B) Multiplication rule

C) Both A and B above

D) Neither A nor B above

Answer: C) Both A and B above

Insert values

Question 41: Insert Values

If the probability of event A is 0.6, what is the probability of event A not occurring?

Answer: 0.4

Question 42: (Insert value)

The probability of drawing a king or queen from a standard deck of cards is 0.2. What is the probability of drawing neither a king nor a queen?

Answer: 0.8

Question 42: Match Items

Match the following definitions with their corresponding terms:

Randomness	The uncertainty of an event occurring
Mutually exclusive events	Events that cannot occur simultaneously
Addition rule	The probability of two events occurring together
Probability	The likelihood of an event occurring

Question 43: Fill in blanks

Probability is the measure of the likelihood of an event occurring, measured from _____ to 1.

Answer: 0

Question 44: (Insert value)

In a tree diagram, each branch represents a _____

Answer: mutually exclusive event

Independent event

Incomplete event

Question 45: MCQ

What does a Venn diagram typically represent?

A) Numerical data
B) Relationships between different sets
C) Geographical locations
D) Time series data

Answer: B

Question 50: MCQ

What type of probability event is rolling a 6 on a die?

A) Mutually exclusive

B) Independent

C) Dependent

D) Uncertain

Answer: B) Independent

Group 2 – select 12 questions (2 marks each)

Question 3: (Multiple choice)

Which method of sampling involves selecting every n^{th} item from a list or population?

A) Random sampling
B) Stratified sampling
C) Systematic sampling
D) Cluster sampling

Answer: C) Systematic sampling

Question 5: MCQ

Which method of data collection involves asking respondents questions directly and usually individually?

Answer: Interview

Research

Secondary source

Random sampling

Question 6: MCQ

What type of graph is used to show the distribution of a single variable across different categories?

Answer: Bar chart

Pie chart

Histogram

Mean deviation

Question 7: MRQ

When should a pie chart be used to display data? (Select all that apply)

A) When showing the proportion of categories within a whole
B) When comparing the sizes of different categories
C) When the data has more than five categories
D) When the total of all categories equals 100%
E) When the data is continuous rather than categorical

Answer: A,D

Question 9: MCQ

What type of graph is used to show the distribution of a single variable across different ranges of values?

A) Pie Chart

B) Bar Graph

C) Histogram

D) Line Graph

Answer: C) Histogram

Question 12: (Insert Value)

In a data set with the following values: 12, 15, 11, 10, 14, what is the median?

Answer: 12

Question 13: (Insert values)

Calculate the range from the given dataset: 3, 7, 2, 9, 5

Answer: 7

Question 15: (Insert values)

The following list represents the number of books read by a group of students in a month: 3, 5, 2, 3, 7, 3, 4, 5, 6.

What is the mode of the list?

Answer:3

Question 20: MCQ

What is the term for the relationship between two variables?

Answer: Correlation

Iteration

Compound

Independent

Question 28: MCQ

What is the purpose of a regression equation?

A) To predict future values

B) To identify outliers

C) To calculate the correlation coefficient

D) To create a scatter diagram

Answer: A) To predict future values

Question 30:True/False:

The product moment correlation coefficient measures the strength and direction of the linear relationship between two variables.

Answer: True

Question 31:True/False:

A regression equation is used to identify outliers in a dataset.

Answer: False

Question 32:True/False:

Seasonality can be removed by using the additive model.

Answer: True

Question 33: True or False:

The trend component in a time series can be identified by examining the graph over time.

Answer: True

Question 34: True/False:

A weighted index number is used to calculate the average of several values.

Answer: True

Question 35: True/False:

The Laspeyres index measures the change in the cost of a fixed basket of goods and services using base period quantities.

Answer: True

Question 36: True/False:

Seasonally adjusted values are used to identify trends in a time series.

Answer: True

Question 47: True/False:

The probability of drawing a king from a standard deck of cards is 0.5.

Answer: FALSE

(Probability is approximately 0.166)

Question 48: True/False:

Two events are mutually exclusive if they can occur simultaneously.

Answer: FALSE

(Two events are mutually exclusive if they cannot occur simultaneously)

Question 49: True/False:

The addition rule states that the probability of two events not occurring together is equal to the product of their individual probabilities.

Answer: TRUE