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| **SESSION** | **APRIL 2024** |
| **PROGRAM** | **BACHELOR of business administration (BBA)** |
| **SEMESTER** | **III** |
| **course CODE & NAME** | **DBB2102 – QUANTITATIVE TECHNIQUES for Management** |
| **CREDITS** | **2** |

**Set – 1st**

**Questions**

**1. a Describe briefly different sources of primary data and secondary data?**

**Ans:Sources of Primary Data Surveys and Questionnaires:**

**Description:** Structured forms with a set of questions aimed at collecting data from a large number of respondents.

**Example:** Customer satisfaction surveys, employee feedback questionnaires.

**Interviews:**

**Description:** Direct, face-to-face or virtual conversations between the researcher and respondents, which can be structured, semi-structured, or unstructured.

**Example:** In-depth interviews with experts, key informant interviews.

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**1 b. Explain in brief the characteristics of a good questionnaire?**

**Ans:**A good questionnaire is a vital tool for collecting reliable and valid data in research.

**Here are the key characteristics that define a well-designed questionnaire:**

**1. Clear Objectives Description:** The questionnaire should align with the specific objectives of the research, ensuring each question contributes to gathering data relevant to the study's goals.

**Example:** If the research aims to measure customer satisfaction, questions should focus on various aspects of the customer experience.

**2. Simplicity and Clarity Description:** Questions should be straightforward and easy to

**2. a. Describe requisites of a good measure of dispersion.**

**Ans:The main objectives of measuring dispersion of a distribution are**:

**To test reliability of an average**

A measure of dispersion is used to test the reliability of an average.

A low value of dispersion indicates that there is greater degree of homogeneity among various items and, consequently, their average can be taken as more reliable or representative

**b. Calculate the mean of the following frequency distribution:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  **X** | **2** | **4** | **6** | **8** | **10** |
| **Frequency f** | **1** | **4** | **6** | **4** | **1** |

**Ans:**

**To calculate the mean of a frequency distribution, you use the formula:**

****

**Where:**

**- (X\) represents the value of the variable.**

**- (f\) represents the frequency of each value.**

**Given the data:**

|  |
| --- |
| **X 2 4 6 8 10** **F 1 4 6 4 1**  |

**3a. Obtain the correlation coefficient for the data given below:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **X:** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |
| **Y:** | **9** | **8** | **10** | **12** | **11** | **13** | **14** | **16** | **15** |

**Ans:**To obtain the correlation coefficient for the given data, we can use the Pearson correlation coefficient formula.

**The formula for the Pearson correlation coefficient (r) between two variables X and Y is given by:**

****

**Where:**

**X i ​ and Y i ​ are individual data points for X and Y.**

**b. Demonstrate the uses of Regression Analysis? Give five examples where the use of regression analysis can beneficially be made.**

**Ans:**Regression analysis is helpful statistical method that can be leveraged across an organization to determine the degree to which particular independent variables are influencing dependent variables.

The possible scenarios for conducting regression analysis to yield valuable, actionable business insights are endless.

**Uses**

**i) The coefficient of correlation** is a measure of the degree of association between two

**Set – 2nd**

**Questions**

**4. Explain various methods of Secular Trends.**

**Ans:Secular Trend:** In this first type of change, the value of the variable tends to either decrease or increase over a long period of time. It can be defined as “a consistent long-term change in the average level of the forecast variable per unit of time”. The steady increase in the population of India recorded by the census department is an example of secular trend. Table shows a secular trend which is showing an upward trend.



**Methods of Measuring Trend**

Trend is measured using by the following methods:

**5. Discuss the problems that are involved in construction of index numbers.**

**Ans:**Constructing index numbers involves several challenges and potential issues. Index numbers are used to measure changes in economic variables over time, such as prices, quantities, and values.

**Here are some key problems involved in the construction of index numbers:**

**1. Selection of Base Period Problem:** Choosing an appropriate base period is crucial as it serves as the reference point. An inappropriate base period can distort the index.

**Example:** A base period during an economic crisis might not represent a typical or stable period, leading to misleading comparisons.

**2. Selection of Items Problem:** Deciding which items to include in the index can be difficult.

**6. a. Explain the meaning of sampling method also delineate its principles.**

**Ans:**

**Meaning of Sampling**

Method Sampling is a statistical process used in research to select a subset (sample) from a larger population for the purpose of making inferences about the whole population. Rather than studying the entire population, which can be time-consuming and costly, researchers study the sample and use the results to generalize to the population.

**Principles of Sampling**

**To ensure that the sample accurately reflects the population and that the results are**

**b. Describe acceptance of sampling plan.**

**Ans:**An acceptance sampling plan is a statistical method used in quality control to determine whether to accept or reject a batch of products based on a sample drawn from that batch. It is widely used in manufacturing and production environments to ensure that the quality of products meets predetermined standards without inspecting every item in the batch.

**Key Elements of an Acceptance**

**Sampling Plan Lot or Batch:** The total number of items produced or received at one time,