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| **SESSION** | **AUG/SEP 2023** |
| **PROGRAMME** | **MASTER OF BUSINESS ADMINISTRATION (MBA)** |
| **SEMESTER** | **I** |
| **COURSE CODE & NAME** | **DMBA103-STATISTICS FOR MANAGEMENT** |
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**SET 1**

**1 Define statistics. Explain various functions of statistics. Also discuss the key limitations of statistics. 2+4+4**

**Ans 1.**

**Statistics for Management: Definition, Functions, and Limitations**

**1. Definition of Statistics:** Statistics can be understood in two main contexts:

a) Singular Sense: In this context, 'statistics' refers to the science and art of collecting, presenting, analyzing, and interpreting data in order to make informed decisions. It provides methods and tools for dealing with variability, uncertainty, and making inferences about populations from samples.

b) Plural Sense: When used in the plural, 'statistics' refer to numerical facts or data points collected systematically. For instance, the GDP growth rate of a country, the average age of =

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**2. Define Measurement Scales. Discuss Qualitative and Quantitative data in detail with examples. 2+8**

**Ans 2.**

**Measurement Scales**

Measurement scales refer to various types of categories into which data can be classified. These scales are foundational in the field of statistics and research, as they dictate the type of statistical technique that can be used to analyze the data. There are primarily four types of measurement scales: nominal, ordinal, interval, and ratio.

**1. Qualitative Data**

Qualitative data, often termed as categorical data, deals with characteristics and descriptors that can be observed but not measured. In other words, it's about understanding an attribute rather than counting it or measuring it with exactitude. Qualitative data can be divided based on the

**3. Discuss the basic laws of Sampling theory. Define following Sampling techniques with help of examples:**

**Stratified Sampling**

**Cluster Sampling**

**Multi-stage Sampling 4+6**

**Ans 3.**

**Laws of Sampling Theory**

Sampling is a fundamental concept in statistics, which deals with the selection of a subset of individuals from within a statistical population to estimate characteristics of the whole population. There are basic laws of sampling theory that guide how sampling should be done to ensure that the sample is representative of the entire population.

**Law of Statistical Regularity:** Even if the population is heterogeneous, if the sample is random and sufficiently large, it will still be representative of the population. This law suggests that random samples exhibit the same properties and characteristics as the population from which they are drawn.

**SET 2**

**1 Define Business Forecasting. Explain various methods of Business Forecasting. 10**

**Ans 1.**

**Business Forecasting Definition and Methods**

Business Forecasting refers to the process of estimating or predicting future trends, demands, and developments in a particular business or industry based on historical data, market analysis, and relevant business insights. It aids businesses in making informed decisions, planning for the future, managing resources effectively, and anticipating market changes.

**Methods of Business Forecasting:**

**1. Judgmental or Qualitative Forecasting:**

**Expert Opinion:** This method involves seeking the opinion of experts in the respective field to predict future outcomes. Their insights, based on experience and expertise, can guide business decisions.

**2. What is Index number? Discuss the utility of Index numbers 5+5**

**Ans 2.**

**Index Number**

An index number is a statistical tool that measures the relative change in a particular variable or a group of related variables over time or different geographical locations. Typically, it quantifies the changes in terms of percentages. Index numbers are often used to track economic indicators, such as inflation, production, and the cost of living. The base year or location is given a value of 100, and subsequent values are calculated to represent the relative change from this base value.

**Utility of Index Numbers:**

1. **Economic Analysis**: Index numbers are extensively used to study economic trends and formulate policies. For instance, the Consumer Price Index (CPI) provides insights into

**3. Discuss various types of Estimators. Also explain the criteria of a good estimator. 5+5**

**Ans 3.**

**Various Types of Estimators**

Estimators are statistical measures that give an approximation of a particular population parameter based on the information available from a sample. There are several types of estimators:

1. **Point Estimator:** This gives a single value as an estimate of the population parameter. For instance, the sample mean (X̄) is a point estimator of the population mean (μ).
2. **Interval Estimator:** Instead of giving a single value, an interval estimator provides a range of values as the estimate for the population parameter. A confidence interval is an