ASSIGNMENT

Course Code	**:**	**MMPC-005**
Course Title	**:**	**Quantitative Analysis for Managerial Applications**
Assignment Code	**:**	**MMPC-005/TMA/ JULY/2026**
Coverage	**:**	**All Blocks**

Note: Attempt all the questions and submit this assignment to the Coordinator of your study centre. Last date of submission for July 2026 Semester is 31st October 2026 and for January 2027 Semester is 30th April 2027.

1. Distinguish between primary and secondary data. Discuss various methods of collecting primary data. Indicate the situation in which each of these methods should be used.

2. Based on a recent nation-wide poll, a seller of printed advertisements estimates that 56% of all adults usually open all the mails they receive. If this is still the current rate at which adults open mail, what is the probability that, in a random sample of 1000 adults, the number who usually open all of their mails will be
   a) Less than 541?
   b) 570 or more?

3. List the various reasons that make sampling so attractive in drawing conclusions about the population. Also explain the major difference between probability and non-probability sampling.

4. As part of an investigation of employee turnover, an industry-wide survey of people in sales management positions gave the number of years of experience in sales relate positions. The data is as follows:

	Males	**Females**
Sample size	80	70
Mean years	21.7	18.5
Std.dev of years	9.3	4.8

   Construct a 95% confidence interval for the difference of means $\mu_1 - \mu_2$.

5. Write short notes on any three of the following:
   a) Decision Tree Approach
   b) Non-Probability Sampling Methods
   c) Central Limit Theorem
   d) The Correlation Coefficient

Q1. Distinguish between primary and secondary data. Discuss various methods of collecting primary data. Indicate the situation in which each of these methods should be used.

Answer:

Data used in quantitative analysis may be collected for the first time or obtained from records already available. On this basis, data can be divided into primary data and secondary data.

Primary Data and Secondary Data

Primary data are original data collected by the investigator for the specific purpose of the study. For example, if a company directly asks its customers about their level of satisfaction, the replies collected are primary data.

Secondary data are data that have already been collected by someone else for another purpose and are later used by the investigator. Examples include government reports, census publications, company records, research reports and published statistical sources.

Basis	Primary Data	Secondary Data
Source	Collected first-hand by the investigator.	Already collected by another person or organisation.
Purpose	Collected for the present study.	Originally collected for some other purpose.
Cost and time	Usually more costly and time-consuming.	Usually quicker and less costly to obtain.
Control	Investigator has more control over the method and quality.	Investigator has limited control over how the data were collected.

Methods of Collecting Primary Data

Primary data may broadly be collected through the observation method and the questionnaire method. The questionnaire method may be carried out through personal interview, mail or telephone.

1. Observation method: The investigator does not ask questions but observes the phenomenon and records the required facts. It should be used when actual behaviour, events or physical conditions can be directly seen and recorded. For example, customer movement in a shop can be studied by observation.
2. Personal interview: The interviewer meets the respondent face-to-face and records the answers. It is suitable when detailed and reliable information is required, questions may need explanation, or doubtful answers need to be checked. It is less suitable for a very large and widely scattered group because it takes more time and money.
3. Mail questionnaire: A questionnaire is sent to respondents, who fill it in and return it. It is useful when the area of investigation is large and respondents are spread over many places. It is most suitable when respondents are literate and can understand the questions without help.
4. Telephone interview: The investigator asks questions and records replies over the telephone. It is useful when information is required quickly and respondents can be reached by phone. It works best for short and clear questions rather than long or complicated interviews.

The method should be chosen according to the type of information required, location of respondents, available time and cost, and the level of accuracy needed.