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

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Answer

Data used for managerial decisions may come directly from a fresh investigation or from records that already exist. This gives the basic distinction between primary and secondary data. The choice is important because it affects cost, time, accuracy and the suitability of the information for the decision being studied.

Primary data are collected first-hand by the investigator for the specific purpose of the present study. The researcher decides what information is needed, who should provide it, how the concepts will be measured and how the data will be checked. For example, a company interviewing its own customers to find out why repeat purchases have fallen is collecting primary data for that particular problem.

Secondary data are data that have already been collected, processed or published for some earlier purpose. They may come from internal company records, government publications, census reports, industry associations, research reports, books, journals and reliable databases. A manager using last year's sales records or published population figures is therefore using secondary data. Secondary data are often examined first because they are quicker and cheaper to obtain, but their definitions, period and coverage may not exactly match the present study.

The main differences can be seen clearly in the following table.

Basis	Primary data	Secondary data
Purpose	Collected specifically for the current study and its objectives.	Originally collected for an earlier or different purpose.
Source	Obtained directly from respondents, observation, experiments or field investigation.	Taken from existing internal records or external publications and databases.
Control	The researcher controls definitions, questions, sampling and measurement procedures.	The present user has little or no control over how the original data were produced.
Cost and time	Usually more costly and time-consuming because fresh field work is required.	Usually faster and less expensive because the information already exists.