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# MS–08

## MANAGEMENT PROGRAMME (MP)

## Term-End Examination

## December, 2025

### MS-08 : QUANTITATIVE ANALYSIS FOR MANAGERIAL APPLICATIONS

*Time : 3 Hours* *Maximum Marks : 100*

*Weightage : 70%*

***Note :*** *(i) Section A has* ***six*** *questions, each carrying 15 marks. Attempt any* ***four*** *questions.*

*(ii) Section B is compulsory and carries 40 marks. Attempt* ***both*** *the questions.*

*(iii) Use of calculator is permissible.*

### Section—A

1. Explain the meaning of descriptive statistics and inferential statistics. Define the type of variables used in statistics and comment on their usage.

2. 'A' speaks truth in 75% cases and 'B' in 80% of the cases. In what percentage of cases are they likely to contradict each other in narrating the same incident ?

3. Compute the Quartile $Q_2$ and Percentile $P_{60}$ and interpret these values for the grouped data showing profits of 100 companies in a year in the table given below :

| Profit (in lakh rupees) | Number of Companies |
|---|---|
| 20—30 | 20 |
| 30—40 | 10 |
| 40—50 | 15 |
| 50—60 | 15 |
| 60—70 | 40 |

4. Explain hypothesis testing. What are the steps involved in hypothesis testing ? Discuss the *two* types of errors in testing of hypothesis.

5. A preliminary sample of 100 labourers was selected out of 5000 population by using simple random sampling. It was found that 40 of the selected labourers opt for a new incentive scheme. How large a sample must be selected to have a precision of $\pm 5\%$ with 95% confidence ? (Given the tabulated value of statistic used at $\alpha = 0.05$ is 1.96).

6. Write short notes on any ***three*** of the following :

   (a) Methods of collecting primary data

   (b) Criterion of Regret in Decision Theory

   (c) Non-probability sampling methods

   (d) Testing the Goodness of Fit

   (e) Least Square Criterion

## Section—B

7. For a set of 1000 observations known to be normally distributed, the mean is 534 cm and S.D. is 13.5 cm. How many observations are likely to exceed 561 cm ? How many will

be between 520.5 and 547.5 cm ? (Given that total area under the standard normal curve is 1, area under standard normal curve between mean and the calculated value for first part is 0.4772 and for the second part 0.3413).

8. "Time-series analysis is one of the most powerful methods in use, especially for short-term forecasting purposes." Comment on this statement.

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