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MMPC–005

**MASTER OF BUSINESS
ADMINISTRATION
(MBA)**

Term-End Examination

December, 2024

**MMPC-005 : QUANTITATIVE ANALYSIS
FOR MANAGERIAL APPLICATIONS**

Time : 3 Hours

Maximum Marks : 100

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. “Different issues arise while analysing decision problems under uncertain conditions of outcomes.” Explain the concept of decision theory and certain key issues involved in decision theory.
2. Calculate the standard deviation from the following data :

Age	No. of Workers
20—25	170
25—30	110
30—35	80
35—40	45
40—45	40
45—50	30
50—55	25

3. In trying to evaluate the effectiveness of ad. campaign, a firm compiled the following information :

Year	Ad. expenditure (in ₹ '000)	Sales (lakh ₹)
1968	12	5.0
1969	15	5.6
1970	15	5.8
1971	23	7.0
1972	24	7.2
1973	38	8.8
1974	42	9.2
1975	48	9.5

Calculate the regression equation of sales on ad. expenditure.

4. What do you understand by non-probability sampling methods ? Explain the various types of non-probability sampling.

5. “Time series analysis is one of the most powerful methods in use, especially for short-term forecasting purposes.” Comment on the statement. Also, explain in brief the decomposition method.
6. Write short notes on any *three* of the following :
- (a) Skewness
 - (b) Binomial Distribution
 - (c) Type 1 error
 - (d) The Correlation Coefficient
 - (e) Cluster Sampling

Section—B

7. A multiple choice quiz has 200 questions, each with 4 possible answers, out of which only one is correct. What is the probability (using normal approximation to binomial distribution) that

sheer guess work yields from 25 to 30 correct answers for 80 problems (out of the 200 problems) about which the student has no knowledge ?

(Tabulated Z value at 2.58 = 0.4951 and Tabulated Z value at 1.29 = 0.4015).

8. Explain the various diagrams and graphs that can be used for charting a frequency distribution.

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