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MMPC-005

MASTER OF BUSINESS ADMINISTRATION (MBA)

Term-End Examination

June, 2024

MMPC–005 : QUANTITATIVE ANALYSIS FOR MANAGERIAL APPLICATIONS

Time : 3 Hours *Maximum Marks : 100*

Note : *Section A has six questions, each carrying 15 marks. Attempt any* ***four*** *questions. Section B is compulsory and carries 40 marks. Attempt both the questions. Use of calculator is permissible.*

Section–A

1. "Primary data may either be collected through the observation method or through the questionnaire method." Explain, in view of statement, any *one* method in brief.

2. Seven methods of imparting business education were marked by the MBA students of two universities as follows :

Method of Teaching	I	II	III	IV	V	VI	VII
Rank by Students of University A	2	1	5	3	4	7	6
Rank of Students of University B	1	3	2	4	7	5	6

3. The distribution of the total time a light bulb will burn from the moment it is first put into service is known to be exponential with mean time between failure of the bulbs equal to 1000 hours. What is the probability that a bulb will burn more than 1000 hours ?

   (The value of $e^{-1} = 0 \cdot 368$).

4. Explain why forecasting is so important in business. Identify the applications of forecasting for medium and short-term decisions.

5. Explain the concept of sampling distribution. Also, state why do we need to study sampling distributions.

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

   (a) Mathematical properties of Median

   (b) Pascal Distribution

   (c) Hypothesis Testing Procedure

   (d) Linear Regression

   (e) Stratified Sampling

Section–B

7. Five coins are tossed 3200 times and the following results are observed :

No. of Head	Frequency
0	80
1	570
2	1100
3	900
4	500
5	50

Test the hypothesis that the coins are biased. You can make use of the following data in drawing your conclusion :

D.F. (degree of freedom)	χ^2 value at 5% level of significance
1	3.841
2	5.991
3	7.851
4	9.488
5	11.070
6	12.59

8. Explain the term probability theory. What are the different approaches to probability theory ?