

## MANAGEMENT PROGRAMME

Term-End Examination

December, 2015

### MS-8 : QUANTITATIVE ANALYSIS FOR MANAGERIAL APPLICATIONS

Time : 3 hours

Maximum Marks : 100

(Weightage 70%)

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- Note :**
- (i) *Section A has six questions, each carrying 15 marks. Attempt any four questions from this Section.*
  - (ii) *Section B is compulsory and carries 40 marks. Attempt both questions.*
  - (iii) *Statistical tables may be supplied on request.*
  - (iv) *Use of calculator is permissible.*
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#### SECTION - A

1. A person pays a total of ₹ 975 through monthly installments each less than the former by ₹ 5. The first installment is ₹ 100. In how many installments will the amount be paid ?
2. Calculate the harmonic mean from the following frequency distribution :

Class	0 - 10	10 - 20	20 - 30	30 - 40
Frequency	5	8	3	4

3. The incidence of a certain disease is such that on an average 20% of workers suffer from it. If 10 workers are selected at random, find the probability that :
- Exactly two workers suffer from the disease.
  - Not more than 2 workers suffer from the disease.
4. Explain the meaning of sampling distribution of a sample statistic. Obtain the sampling distribution of mean in case of sampling from infinite populations.
5. A company wants to study the relation between R and D expenditure (X) and sales (Y) for the ten-year period. Determine the correlation coefficient between these variables.

X (in thousands)	50	50	50	40	30	20	20	15	10	5
Y (in thousands)	700	650	600	500	450	400	300	250	210	200

6. Write short notes on **any three** of the following :
- Identity matrix
  - Quantiles
  - Axioms of probability
  - The power curve of a test
  - Mixed Auto-regressive - moving average models

## SECTION - B

7. The mean life of a sample of 10 electric bulbs was found to be 1456 hours with a standard deviation of 423 hours. A second sample of 17 bulbs chosen from a different batch showed a mean life of 1280 hours with a standard deviation of 398 hours. Is there a significant difference between the means of the two batches ?
8. What is skewness ? Distinguish between Karl Pearson's and Bowley's coefficient of skewness. Which one of these would you prefer and why ?
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