No. of Printed Pages : **3**

MS-8

MANAGEMENT PROGRAMME

Term-End Examination

December, 2014

03761

MS-8 : 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 from this Section.*

*(ii) Section **B** has **two** questions, each carrying **20** marks. Attempt **both** the questions from this section.*

(iii) Use of scientific calculator is permitted.

SECTION - A

1. A maruti car is purchased for Rs. 60,000/-. If the depreciation for the first three years is at 15% per annum and for the next two years is at 20% per annum, then calculate the depreciated value of the car at the end of five years. **15**

2. It has been observed that on an average one telephone number out of ten is busy. Using binomial distribution find the probability that if five randomly selected telephone numbers are called **15**

(a) not more than two will be busy

(b) at least four of them are busy

3. A builder employs three types of workers : male, female and children. He pays Rs. 350, Rs. 250 and Rs. 200 per day to a male, female and child worker respectively. Suppose he employs 40 males, 30 females and 10 children, determine 15

(a) Average wage per day paid by the builder

(b) Average wage per day paid by the builder if the number of males, females and children employed are equal.

4. Two brands of electric bulbs are quoted at the same price. A buyer tested a random sample of 100 bulbs of each brand and found the following : 15

	Mean Life (in hrs)	Standard Deviation of Life (in hrs)
Brand I	1400	90
Brand II	1350	100

Test the hypothesis that there is a significant difference in the quality of the two brands of bulbs at 5% level of significance. The critical value of Z at 5% level of significance is 1.96.

5. Explain Binomial and Normal distribution. Mention the conditions under which a random variable having a binomial distribution with parameters n and p can be approximated to a random variable having a normal distribution with parameters μ and σ. 15

6. Write short notes on **any three** of the following : **3x5=15**

(a) Linear function

(b) Coefficient of variation

(c) Baye's Theorem

(d) Stratified sampling

(e) Correlation coefficient

SECTION - B

7. Using the method of least squares, find the regression equation of y on x for the data given in the table below : **20**

x	1	2	3	4	5
y	5	9	14	17	20

And from the regression equation obtained, find the value of y corresponding to $x = 8$

8. Solve the following system of non - homogeneous linear equations using Cramer's rule : **20**

$x + 2y + 3z = 6$
$2x + 4y + z = 7$
$3x + 2y + 9z = 14$