

13095

MANAGEMENT PROGRAMME

Term-End Examination

December, 2013

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 is **compulsory** and carries 40 marks. Attempt **Both** questions.
 - (iii) Statistical tables may be supplied on request.
 - (iv) Use of calculator is allowed.

SECTION - A

1. Suppose the price p and quantity q of a commodity are related by the equation,
 $q = -p^2 - 4p + 30$
 Find
- (a) Elasticity of demand at $p = 2$
 - (b) Marginal Revenue (MR)
2. Consider the following data :

Daily sales	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90
No. of firms	15	23	27	20	35	25	5

Find the modal daily sales.

3. It is not known whether a coin is fair or unfair. If the coin is fair the probability of a tail is 0.5 but if the coin is unfair the probability of a tail is 0.10. A prior probability given of a fair coin is 0.80 and that of unfair coin is 0.20. The coin is tossed once and tail is the result. What is the probability that the coin is fair ?

4. Explain the concept of the power curve of a test and p-value of a test.

5. Regarding a certain normal distribution concerning the income of the individuals we are given that mean = Rs.500 and standard deviation = Rs.100. Find the probability than an individual selected at random will belong to income-group Rs. 550 to Rs. 650.

6. Write short note on **any three** of the following :
 - (a) Step Function
 - (b) Harmonic Mean
 - (c) Decision Tree Approach
 - (d) Double Sampling
 - (e) Auto Regressive Models

SECTION - B

7. The table given below shows the data obtained during outbreak of small pox.

	Attacked	Not attacked	Total
Vaccinated	31	469	500
Not vaccinated	185	1315	1500
Total	216	1784	2000

Test the effectiveness of vaccination in preventing attack from small pox at 5% level of significance.

8. Fit a regression line $y = a + bx$ by the method of least squares.

Income X	41	65	50	57	96	94	110	30	79	65
Expenditure Y	44	60	39	51	80	68	84	34	55	48
