

MANAGEMENT PROGRAMME

Term-End Examination

June, 2012

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.
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SECTION-A

1. What is Statistical Decision Theory ? Describe the four different states of decision environment in managerial applications. Which is the most prevalent state ?
2. On 1st January every year, a person buys N.S.Cs (National Savings Certificates) of value exceeding that of his last year's purchase by Rs. 100. After 10 years, he finds that the total value of the certificates held by him is Rs. 54,500.

Find the value of the certificates purchased by him :

- (a) In the first year
- (b) In the eighth year

3. A certain manufacturing process yield electrical fuses of which, in the long run, 15% are defective. Find the probability that in a sample of 10 fuses selected at random there will be :

- (a) no defective
- (b) at least one defective

4. A manager at a drug manufacturing wants to estimate what proportion of the adult population of India has high blood pressure. He wants to be 99% sure that the error of his estimate will not exceed 0.02. Census reports indicate that about 0.20 of all adults have high blood pressure. What sample size shall he take ?

5. After 9/11 attack on World Trade Center, a company could partially recover the following record on analysis of correlation :

Variance of $x = 9$

Regression Equations

$$8x - 10y + 66 = 0$$

$$40x - 18y = 214$$

What was :

- (a) The correlation coefficient between x and y ?
- (b) The standard deviation of y ?

6. Write short notes on *any three* of the following :
- (a) Algebraic and Transcendental functions
 - (b) Quartile Deviation
 - (c) Criterion of optimism
 - (d) Disproportional Stratified Sampling
 - (e) Least Square Criterion

SECTION-B

7. For a set of 1000 observations known to be normally distributed, the mean is 534 cm and SD is 13.5 cm. How many observations are likely to exceed 561 cm ? How many will be between 520.5 and 547.5 cm ?
8. The following table gives the number of aircraft accidents that occurs during the various days of a week. Find whether the accidents are uniformly distributed over the week.

Days	SUN	MON	TUE	WED	THU	FRI	SAT
No.of Accidents	14	16	8	12	11	9	14

Given χ^2 at 6.d.f = 12.59
