

MANAGEMENT PROGRAMME**Term-End Examination****June, 2014****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. Solve the system of simultaneous linear equations by using matrix algebra :
- $$2x_1 + 4x_2 + x_3 = 8$$
- $$3x_1 + 3x_2 + x_3 = 16$$
- $$3x_1 + x_2 + 2x_3 = 8$$
2. Following is the data of sales figure of a company for 100 days :

Sales (Rs. thousands)	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	90 - 100
No. of days	10	15	25	30	12	8

Compute the Average Deviation.

3. Suppose that a manufactured product has 2 defects per unit of product inspected. Use Poisson distribution and calculate the probabilities of finding a product without any defect, with three defects and with four defects.

(Given $e^{-2} = 0.13534$)

4. Discuss the role of Chi-square distribution in testing of hypothesis.

5. A marketing manager wants to know if there is any difference in the proportion of consumers who like the taste of his product. He finds that 40 out of a sample of 85 consumers respond that they like the taste of his product. Similarly 35 out of a second sample of 65 consumers respond that they like the taste of the product when they are administered a product of the next competing brand. Based on these observations what should the marketing manager conclude at a 5% significance level ?

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

- (a) Marginal Revenue
- (b) Deciles
- (c) Marginal Analysis
- (d) Non-sampling error
- (e) Moving average models

SECTION - B

7. Suppose the ranks obtained by a set of 10 students in a Mathematics test (X) and a Physics test (Y) are shown below.

Rank (X)	1	2	3	4	5	6	7	8	9	10
Rank (Y)	3	1	4	2	6	9	8	10	5	7

Find the rank correlation.

8. A banker claims that the life of a regular saving account opened with his bank averages 18 months with a standard deviation of 6.45 months. Answer the following :
- (a) What is the probability that there will still be money after 22 months in a savings account opened by a depositor ?
- (b) What is the probability that the account will have been closed before two years ?
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