(a) Find three months moving averages.

(b) Compute forecast error.

(c) Compute mean square error (MSE) and mean absolute deviation (MAD).

M.B.A./PGDIM EXAMINATION JANUARY, 2006.

Second Semester for AY 2003–04, CY–2004, AY 2004–05 and CY–2005 M.B.A. Students.

Second Semester for AY 2003–04 and CY–2004 PGDIM Students.

QUANTITATIVE ANALYSIS FOR MANAGERIAL APPLICATIONS

Time : 3 hours Maximum marks : 75

PART A — (3 × 5 = 15 marks)

Answer any THREE questions.

1. Define the term Identy Matrix. Is rank defined only for square Matrices?

2. What is a Mail survey? What are the tasks in mailing questionnaires?

3. What is conditional probability? Give an example.

4. Give the classification of sampling methods.

5. Highlight the significant role of Regression in quantitative Techniques for management decisions.

PART B — (4 × 15 = 60 marks)

Answer any FOUR of the following questions.

All questions carry equal marks.

6. Discuss role and scope of quantitative methods for scientific decisions in business management.

7. The demand of a product is estimated using the four year moving average method, which is nothing but the weighted arithmetic mean Method. The demand in units of the years 1999, 2000, 2001 and 2002 are 300, 350 and 400 and 325, respectively. The corresponding weights are 1, 2, 3 and 4.Find the demand for the year 2003.

8. What are secondary data? What are the internal and external sources of secondary data?

9. A milk man buys milk at Rs.3 per litre and sells it for Rs. 2.50 per litre. Unsold milk has to be thrown away. The daily demand in litres has the following probabilistic distribution.

Litres:	46	48	50	52	54	56	58	60	62	64
Probability:	0.01	0.03	0.06	0.1	0.2	0.25	0.15	0.1	0.05	0.05

If each day's demand is independent of previous day's demand, how many litres should be ordered every day?

10. The annual income of respondents follows normal distribution. A random sample of 15 respondents are taken. The mean and variance of the annual Income of the respondents in the sample are Rs. 3 lakhs and Rs.9 lakhs, respectively. Find the confidence interval for the annual income of the respondents at a significance level of 0.05.

11. The sales representative of a pharmaceutical company claims that a new drug for a disease cures in 95% of the cases. When it is administered by a doctor to 100 patients, it cured only 90 patients. Check the claim of the sales representative at a significance level of 0.05.

12. The actual demand (in thousands of units) of a product for 6 months are summarized below :

Month (t)	Demand (Dt)
1	16
2	24
3	40
4	60
5	85
6	98