

EXECUTIVE MBA (EXMBA)

Term-End Examination

June, 2011

MCT-053 : QUANTITATIVE TECHNIQUES

Time : 3 hours

Maximum Marks : 100

Note : Answer any five questions. All questions carry equal marks.

1. (a) A manager of a large corporation has recommended that Rs. 1000/- raise be given to an employee to ensure he does not leave the company. What internal and external sources of data might be used to decide whether such a salary increase is appropriate ? 10
- (b) What is a statistical table ? Explain clearly the essentials of a good table. 10

2. (a) Explain the following terms. 10
 - (i) Histograms
 - (ii) Frequency polygon
 - (iii) Ogive

- (b) The following data represent the gross income, expenditure (Rupees in lakhs) and net profit (Rupees in lakhs) during the years 1999 to 2002. 10

	1999-2000	2000-2001	2001-2002
Gross Income _____	570	592	632
Gross Expenditure _____	510	560	610
Net Income _____	60	32	22

Construct a diagram or chart you will prefer to use for the above data.

3. (a) Is it necessarily true that being above average indicates that someone is superior? Explain. 10
- (b) During a period of decline in stock market prices a stock is sold at Rs. 50/- per share on one day, Rs. 40 on the next day and Rs. 25/- on the third day. 10
- (i) If an investor bought 100, 120 and 180 on these three days, find the average price paid per share.
- (ii) If the investor bought Rs. 1000/- worth of share on each of three days, find the average price paid per share.
4. (a) Explain and illustrate how measures of variation afford a supplement to the information about frequency distribution furnished by averages. 10

(b) The mean of 5 observations is 15 and variation is 9. If two more observations having values -3 and 10 are combined with these 5 observations, what will be the new mean and variance of 7 observations ? 10

5. (a) It is said that index nos. are a specialised type of averages. How far do you agree with this statement ? Justify. 10

(b) Compute a price index for the following by (a) sample aggregative method (b) average of price relative method by using arithmetic mean. 10

Commodity	A	B	C	D	E	F
Price in 1991 _____	20	30	10	25	40	50
Price in 2001 _____	25	30	15	35	45	55

6. (a) Explain the following terms. 10

(i) Joint Probability

(ii) Conditional Probability

(b) A piece of equipment will function only when three components A, B and C are working. The probability of A failing during one year is 0.15 , that of B is 0.05 and that of C failing is 0.10 . What is the probability that equipment will fail before the end of year ? 10

7. (a) What are the chief properties of normal distribution ? Describe the importance of normal distribution in Statistical Analysis. 10
- (b) Assume mean height of soldier's to be 68.22 inches with a variance of 10.8 inches. How many soldier's in a regiment of 1000 would you expect to be over six feet tall ? 10
8. (a) Explain the concept of regression and point out its importance in Business forecasting. 10
- (b) Find the correlation coefficient by Karl Pearson's method between x and y and interpret its value. 10

x -	57	42	40	33	42	45	42	44	40	56	44	43
y	10	60	30	41	29	27	27	19	18	19	31	29

