2016

M B A

1st Semester Examination

QUANTITATIVE TECHNIQUES

PAPER—MBA-103

Full Marks : 100

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

1. Answer any *eight* questions from the following : 8×5

(a) Explain discrete and continuous variables with examples.

(b) Find the median of the following numbers :
94, 33, 86, 68, 32, 80, 48, 70.

(c) You fly to a place-X in a Boeing at a speed of 500 miles per hour and come back from X following the same route at a speed of 160 mph. What is the average speed for the to-and-fro journey ?

(d) From the following data determine in which firm, A or B, there is greater variablity in individual wages.

	Firm A	Firm B
Average monthly wages	Rs. 52.50	Rs. 47.50
Variance of distribution of wages	100	121

(e) If the A.M. and C.V. of x are 10 and 50% respectively, find variance.

(f) If $\sigma_y = 4$, $b_{yx} = 0.48$, $r = 0.6$, find σ_x.

(g) What is the implication of R^2 in regression ?

(h) State the uses of CLI.

(i) Distinguish between primary data and secondary data with examples.

(j) Prove that in order that a sum of money may double itself in 10 years by investment at compound interest, payable annually, the interest should be approximately 7.2 percent per annum.

(k) Find the mean and standard deviation of n natural numbers.

(*l*) Explain the Time Reversal Test with the help of suitable example.

2. Answer any *four* questions from the following : 4×10

(a) Given the following frequency distribution with some missing frequencies :

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	185	-	34	180	136	-	50

If the total frequency is 685 and median is 42.6, find out the missing frequencies.

(b) (i) Find the difference between the amounts of the simple interest and the compound interest on Rs. 5000 for 10 years at the rate of 9% p.a.

(ii) If selling price of a product is Rs. 824 and profit is $33\frac{1}{3}\%$ on cost. Find the cost price.

(c) The lines of regression of y on x and x on y are respectively y = x + 5 and 16x = 9y – 94. Find the variance of x if the variance of y is 16.

(d) Compute Fisher's price index from the following information :

P_0 (Base price)	V_0 (Base value)	P_n (Current price)	V_n (Current value)
5	400	10	500
10	500	20	700
20	700	30	1000

(e) Owing to change in prices the consumer price index of the working class in a certain area rose in a month by one quarter of what it was prior to 225. The index of food became 252 from 198, that of clothing from 185 to 205, of fuel and lighting from 175 to 195, and that of miscellaneous from 138 to 212. The index of rent however remained unchanged at 150. It was known that the weight of clothing, rent and fuel and lighting were the same. Find out the exact weight of all the groups.

(f) A financial analyst wanted to find out whether inventory turnover influences any company's earnings per share (in per cent). A random sample of 7 companies listed in a stock exchange were selected and the following data was recorded for each.

Company	Inventory Turnover (No. of times)	Earnings per share (percent)
A	4	11
B	5	9
C	7	13
D	8	7
E	6	13
F	3	8
G	5	8

Find the strength of association between inventory turnover and earnings per share. Interpret this finding.

[Internal Assessment : 20 Marks]