LM3AGD

TIME : 2 Hrs. **MARKS : 60**

Note :- 1) All questions are compulsory
2) All questions carry equal marks.
3) Figures to the right indicate marks assigned to each sub-question.

Q.1 a) In a fairly symmetrical distribution, the mean is 50 and median is 51, therefore the mode is ..... . [1]

OR

Q. 1. a) Define mean deviation from mean. [1]

b) Attempt any two questions out of three from the following.

i) What is disperson ? State the measures of dispersion. [7]

ii) Calculate the coefficient of variation for the following age distribution of 125 persons.

Age in years :	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of persons :	15	15	23	22	25	10	15

[7]

iii) The following are some particulars of the distribution of weight of boys and girls in a class.

	Boys	Girls
Number	100	50
Mean Weight	60 kg	45 kg
variance	9	2

Find the standard deviation of the combined data. Which of the distribution is more variable ? [7]

Q. 2. a) Write formula for pearsons coefficient of correlation r. [1]

OR

Q. 2. a) If $byx = \frac{7}{8}$ $bxy = \frac{5}{4}$ then r = —— [1]

i) Calculate spearman's rank correlation coefficient for the following data.

Marks in Statistics	40	42	45	42	36	39
Marks in Accountancy	46	43	44	39	40	40

[7]

ii) Determine most likely salary of husband when wife's salary is Rs. 15000.

Wife's Salary (in 000 ₹) :	7	8	12	14	17	19
Husband's Salary (in 000 ₹) :	8	10	20	21	13	24

[7]

iii) Define Pearson's coefficient of correlation Interprete the following values of this coefficient r = -1, r = 0 and r = 1 [7]

Q. 3. a) What is an Index number ? [1]

OR

Q. 3. a) State formula for Laspeyre's index number. [1]

b) Attempt any two questions out of three from the following.

i) Compute Fisher's ideal index number from the following data taking 2005 as the base year.

	2005		2008	
Commodity	Quantity	Price	Quantity	Price
A	2	8	3	9
B	4	5	2	8
C	5	9	7	5

[7]

ii) Explain the following p) Time reversal test q) Factor reversal test r) Circular test. State which index number satisfies the three tests. [7]

iii) Constract a cost of living index number with the help of data given below.

		(in Rs.)	(in Rs.)
1	25	2.50	1.75
2	50	1.30	2.10
3	15	5.00	3.75

[7]

Q. 4. a) Define r^{th} raw moment. [1]

OR

a) What is skewness ? [1]

b) Attempt any two questions out of three from the following.

i) From the following data calculate coefficient of skewness based on quartiles.

Wage in Rs. :	0-10	10-20	20-30	30-40	40-50
No. of workers :	22	38	46	35	20

ii) Find the mean values of x and y and coefficient of correlation from the following data.

$3x + 5y - 42 = 0$ and $2x + y - 80 = 0$

obtain y for $x = 10$ and x for $y = 20$ [7]

iii) From fixed base index numbers given below prepare chain base index numbers.

Year :	2005	2006	2007	2008	2009
Index Number :	188	196	204	190	200

[7]