

00953

**MASTER OF BUSINESS
ADMINISTRATION (RETAIL)
(MBARS)**

Term-End Examination

June, 2011

MRS-011 : QUANTITATIVE TECHNIQUE

Time : 3 hours

Maximum Marks : 100

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

1. (a) What are grouped and ungrouped frequency distribution ? What are their uses ? Also explain the method of constructing histogram. 10
- (b) Write short notes on the following : 10
 - (i) Frequency polygon
 - (ii) Ogives
2. (a) What are the chief measure of central tendency ? Discuss their merits. 10
- (b) Calculate three quartiles, 7th decile and Eighty two percentile :- 10

Salary (In thousand Rs)	0-10	10-20	20-30	30-40	40-50
No. of servant	22	38	46	35	20

3. (a) Ten competitors in a beauty contest got marks by three judges in the following orders. 10

First Judge	1	6	5	10	3	2	4	9	7	8
Second Judge	3	5	8	4	7	10	2	1	6	9
Third Judge	6	4	9	8	1	2	3	10	5	7

Use the rank correlation coefficient to discuss which pair of judges have the nearest approach to common tests 'M' beauty.

- (b) Using the method of Least squares, fit a straight line to the following data : 10

<i>x</i>	0	1	2	3	4
<i>y</i>	1	1.8	3.3	4.5	6.3

4. (a) Describe the components of a time series. Illustrate them with a suitable example. 10

- (b) Taking prices of I year as base, construct the index numbers for II and III years from the following data. Use the simple average of relative method. 10

Year	Articles (Rate Per Rupees)		
	A	B	C
I	4 kg	2 kg	1 kg
II	2.5 kg	1.6 kg	1 kg
III	2 kg	1.25 kg	0.8 kg

5. (a) From the following data calculate price index numbers for 2000 with 1990 as base by 10
- (i) Laspeyre's method
 - (ii) Paasche's method
 - (iii) Fisher method

Commodity	1990		2000	
	Price	Quantity	Price	Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

- (b) Define the following functions : 10
- (i) Constant function.
 - (ii) Modulus function.
 - (iii) Reciprocal function.
 - (iv) Signum function.
6. (a) The probability that A hits a target is $\frac{1}{3}$ and the probability that B hits it is $\frac{2}{5}$. What is the probability that the target will be hit, if each one of A and B shoots at the target ? 10
- (b) Mention the parameters of the binomial, poisson and normal distribution. 10

7. (a) Write the parameter of the following distributions. **10**
- (i) t distribution
 - (ii) χ^2 distribution
- (b) Distinguish between : **10**
- (i) Sample and population.
 - (ii) Point estimate and interval estimate.
8. (a) What is major purpose of hypothesis testing ? Explain the various steps involved in hypothesis testing. **10**
- (b) Whether Poisson distribution can be assumed from the data given below : **10**

No. of defects	0	1	2	3	4	5
Frequency	6	13	13	8	4	3