

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

Term-End Examination

December, 2012

MRS-011 : QUANTITATIVE TECHNIQUES

Time : 3 hours

Maximum Marks : 100

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

1. (a) Give one illustration each of the type of data for which you would expect the frequency to be : 10
- (i) Positively skewed
 - (ii) Negatively skewed
 - (iii) J-Shaped
 - (iv) U-Shaped
- (b) Define the following with suitable examples. 10
- (i) Histograms
 - (ii) Frequency polygon
 - (iii) Pie diagram
2. What do you understand by the measures of central tendency. Also find Mean, Median and Mode from the following table : 20

Income (Rs.)	100-200	100-300	100-400	100-500	100-600
No. of persons	15	33	63	83	100

3. (a) Define a relation and a function and examples to illustrate the difference between the two. **10**
- (b) Calculate geometric mean and harmonic mean for the data given below : **10**

x	06	07	08	10	12	15
f	20	15	12	08	4	2

4. (a) Define Karl Pearson's coefficient of correlation. How would you interpret the sign and magnitude of a correlation coefficient ? **10**
- (b) Show that : **10**
- (i) If one of the regression co-efficients is greater than unity, the other must be less than unity.
- (ii) Arithmetic mean of regression coefficient is greater than the correlation co-efficient.

5. (a) Define least squares method and hence fit a straight line to the following data : **10**

x	1	2	3	4	5
y	14	27	40	55	68

- (b) What is business forecasting ? How does analysis of time series help in business forecasting ? **10**

6. (a) If the ratio between Laspeyre's and Paasche's index number is 28 : 27. Find the missing value in the following table. 10

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
x :	1	10	2	5
y :	1	5	---	2

- (b) Write short notes on the following : 10
- (i) Fisher method
 - (ii) Seasonal variations
 - (iii) Irregular variation
7. (a) A room has 3 lamps. From a collection of 10 light bulbs of which 6 are no good, a person selects 3 at random and puts them in a socket. What is the probability that he will have light ? 10
- (b) Distinguish between : 10
- (i) Sample and Population
 - (ii) H_0 and H_1 in testing of hypothesis
 - (iii) Multistage sampling and Sequential sampling.
8. (a) A die is thrown 270 times and the results of these throws are given below : 10

No. appeared on the die	1	2	3	4	5	6
Frequency	40	32	29	59	57	59

Test whether the die is biased or not

- (b) Write Short notes on the following : 10
- (i) The Kruskal - wallis test
 - (ii) Kolmogorov - smirnov test.
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