

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

Term-End Examination

December, 2013

MRS-011 : QUANTITATIVE TECHNIQUES

Time : 3 hours

Maximum Marks : 100

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

1. (a) Point out the necessity, usefulness and limitations of graphical representation of frequency distribution. 10
- (b) How primary data are collected by direct personal interview ? Explain it with its important merits and demerits. 10

2. (a) Discuss various limitations of diagrammatical representation and define a Pie-diagram. 10
- (b) Explain histogram, frequency polygon and frequency curve, and represent the following data by histogram and frequency polygon. 10

Class	0-5	5-10	10-15	15-20	20-25	25-30
Frequency	3	5	9	20	15	6

3. (a) What is tabulation ? What are its use ? 10
Mention the items that a good statistical table should contain.
- (b) Discuss the function 10
 $f : \{1, 2, 3\} \rightarrow \{0, 3, 7, 13, 14\}$ for one-one onto,
where $f(x) = x^2 + x + 1$.
4. (a) Determine mean, median and mode from 10
the following data :

Marks (less than) :	10	20	30	40	50	60	70	80
No. of students :	25	40	60	75	95	125	190	240

- (b) Distinguish between : 10
(i) Quartiles and deciles
(ii) Geometric and Harmonic Mean
5. (a) Calculate Karl Pearson's coefficient of 10
correlation between X and Y from the following data :
 $N = 10, \quad \Sigma X = 140, \quad \Sigma Y = 150,$
 $\Sigma(X - 10)^2 = 180, \quad \Sigma(Y - 15)^2 = 215,$
 $\Sigma(X - 10)(Y - 15) = 60.$
- (b) What do you mean by scatter diagram ? 10
How is scatter diagram used to determine correlation ?
6. (a) Using least square method, fit a straight line 10
to the following data :
 $x \quad 0 \quad 1 \quad 2 \quad 3 \quad 4$
 $y \quad 1 \quad 1.8 \quad 3.3 \quad 4.5 \quad 6.3$
- (b) Distinguish between : 10
(i) Sample and population
(ii) Point estimate and interval estimate
7. (a) Describe the components of a time series. 10
Illustrate them with suitable examples.
- (b) Explain Laspeyres and Paasche's price and 10
quantity index numbers.

8. (a) Write the parameters of the following distributions : **10**
- (i) t-distribution
 - (ii) χ^2 -distribution
 - (iii) F-distribution
- (b) Discuss various steps involved in the analysis of variance in two way classification **10**
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