

**MASTER OF BUSINESS ADMINISTRATION
(NETWORK INFRASTRUCTURE
MANAGEMENT)
(MBANIM)**

Term-End Examination

June, 2012

**MCR-010 : QUANTITATIVE ANALYSIS FOR
MANAGERIAL APPLICATIONS**

Time : 3 hours

Maximum Marks : 100

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

-
1. The manager should seek some balance between quantitative and qualitative factors indecision making. Elaborate the statement giving the situations in which various statistical tools are used. 20

 2. (a) If $g(x)$ is a polynomial function satisfying $g(x)g(y) = g(x) + g(y) + g(xy) - 2$ for all $x, Y \in R$ and $g(2) = 5$ Then find $g(3)$. 10

 - (b) If the first terms of an AP is 2 and the sum of first five terms is equal to one-fourth of the sum of the next five terms, find the sum of first 30 terms. 10

 3. (a) Explain the meaning of the following : 10
 - (i) Mathematical Expectation
 - (ii) Markow process
 - (iii) Baye's theorem
 - (iv) Multiplication theorem of probability

- (b) Clearly explain the circumstances when the following probability distributions are used: **10**
- (i) Binomial distribution
 - (ii) Poisson distribution
 - (iii) Exponential distribution
 - (iv) Normal distribution

4. (a) Narrate fully the role of quantitative technique in the field of business and Industry. Give examples in support of your answer. **10**

- (b) The details of runs gained by two batsman A and B in different innings are as follow. **10**

| | | | | | | | | | | |
|---|----|----|----|-----|----|----|----|----|-----|----|
| A | 24 | 79 | 31 | 114 | 14 | 02 | 68 | 01 | 110 | 07 |
| B | 05 | 18 | 42 | 53 | 09 | 47 | 52 | 17 | 81 | 56 |

Which of the two batsmen is better run scorer

5. (a) Why is sampling necessary in statistical investigations ? Explain the important Method of sampling commonly used. **10**
- (b) A coin is tossed 400 times and it turns head 216 times. Discuss whether the coin may be an unbiased one and explain briefly the theoretical principles you would use for this purpose. **10**

6. Write short notes on :

20

- (a) Type I Error and Type II Error.
- (b) Sampling distribution
- (c) Benefits of sampling
- (d) Procedure of significance sampling

7. (a) Ten competitors in a beauty contest were ranked by three judges in the following orders : 10

I Judge : 1 6 5 10 3 2 4 9 7 8
II Judge : 3 5 8 4 7 10 2 1 6 9
III Judge : 6 4 9 8 1 2 3 10 5 7

use the method of rank correlation to determine which pair of judges has the nearest approach to common taste in beauty ?

(b) For 10 observations on price (x) and supply (y) the following data were obtained: 10

$$\Sigma x = 130 \quad \Sigma y = 220 \quad \Sigma x^2 = 2288$$

$$\Sigma y^2 = 5506 \quad \text{and} \quad \Sigma xy = 3467$$

Obtain the two lines of regression and Estimate the supply when the price is 16 units

8. (a) What is time series ? Explain the various components of time series. 10
- (b) Write short notes on the following : 10
- (i) Additive property of chi - square.
 - (ii) Condition for applying chi - square test.
-