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**MASTER OF BUSINESS
ADMINISTRATION (MBACN)**

Term-End Examination

December, 2012

**MCN-006 : QUANTITATIVE ANALYSIS FOR
BUSINESS DECISIONS**

Time : 3 hours

Maximum Marks : 100

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

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1. (a) Discuss applications of statistics in decision making. 10
- (b) The radius of a spherical balloon increase by 0.2 percent. Find approximately the percentage increase in the volume 10
2. (a) Find the sum of : 10
- (i) $4 + 44 + 444 + \dots$ upto n terms
- (ii) $0.3 + 0.33 + 0.333 + \dots$ upto n terms
- (b) Explain the following terms : 10
- (i) Relative frequency table
- (ii) Ogive
- (iii) Frequency polygon

3. (a) What do you mean by skewness and kurtosis ? Explain in brief. **10**
- (b) Calculate standard deviation and coefficient of variation for the following frequency distribution : **10**

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	10	20	40	30	20	10	5

4. (a) Calculate the coefficient of correlation from the following data : **10**

X	45	56	39	54	45	40	56	60	30	36
Y	40	36	30	44	36	32	45	42	20	36

- (b) Define regression and show that regression coefficients are independent of the change of origin but not of scale. **10**
5. (a) Fit a binomial distribution to the following frequency data : **10**

$x :$	0	1	2	3	4
$y :$	30	62	46	10	2

- (b) What is a Poisson distribution ? Show that it can be derived as limiting case of the binomial distribution. **10**
6. (a) The life of army shoes is normally distributed with mean 8 months and standard deviation 2 months, If 5000 pairs are insured, how many pairs would be expected to need replacement after 12 months ? **10**

- (b) Define exponential distribution and find the mean and variance for the exponential **10**

$$\text{distribution } f(x) = \frac{1}{\beta} e^{-\frac{x}{\beta}}, x \geq 0.$$

7. (a) Define the following : **10**
- (i) Sample and population
 - (ii) Statistic and Parameter
 - (iii) Point estimate and interval estimate
- (b) What is major purpose of hypothesis testing ? Explain the various steps involved in hypothesis testing. **10**
8. (a) Distinguish between : **10**
- (i) Type I error and Type II error
 - (ii) Critical region and acceptance region
 - (iii) Simple random sampling and purposive sampling
- (b) Write a short note on the following : **10**
- (i) χ^2 - distribution
 - (ii) F- distribution
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