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MCN-006

00823

MASTER OF BUSINESS ADMINISTRATION (FULL TIME PROGRAMME)

Term-End Examination

June, 2011

MCN-006 : QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS

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 in decision making. Elaborate the statement giving the situations in which various statistical tools are used. **20**

2. (a) The relation f is defined by **10**

$$f(x) = \begin{cases} x^2 & 0 \le x \le 3 \\ 3x & 3 \le x \le 10 \end{cases}$$

The relation g is defined by

$$g(x) = \begin{cases} x^2 & 0 \le x \le 2 \\ 3x & 2 \le x \le 10 \end{cases}$$

show that f is a function and g is not a function.

(b) In An Arithmetic Progression (AP) the p^{th} term is $\frac{1}{q}$ and the q^{th} term is $\frac{1}{p}$. Find the $(pq)^{th}$ term. **10**

3. (a) If $y = \sqrt{\sin x + \sqrt{\sin x + \sqrt{\sin x + \ldots\ldots}}}$ to ∞ **10**

Prove that $\frac{dy}{dx} = \frac{\cos x}{(2y - 1)}$

(b) Find the inverse of the matrix A. **10**

$$A = \begin{bmatrix} 1 & 0 & -4 \\ -2 & 2 & 5 \\ 3 & 1 & 2 \end{bmatrix}$$

4. (a) What is meant by classification of data ? State its important objective. Briefly explain the different methods of classifying statistical data. **10**

(b) Explain the following terms : **10**

(i) Class - interval
(ii) Class frequency
(iii) Class limits
(iv) Frequency distribution
(v) Cumulative frequency table

5. (a) What do you mean by Skewness and Kurtosis ? Explain in brief. **10**

(b) How would you account for the Predominant choice of arithmetic mean of statistical data of a measure of central tendency ? Under what circumstances would it be appropriate to use mean, median and mode ? Discuss. **10**

6. (a) Define Karl Pearson's coefficient of correlation and also find Karl Pearson's coefficient of correlation from the following data : **10**

(X)	:	10	12	15	14	19
(Y)	:	40	41	48	60	50

(b) Three groups of children contain 3 girls and 1 boy; 2 girls and 2 boys; 1 girl and 3 boys respectively. One child is selected at random from each group. Find the probability that in three selected children are 1 girl and 2 boys. **10**

7. (a) The income of a group of 10,000 person's was found to be normally distributed with mean Rs. 750 P.M. and standard deviation of Rs. 50. Show that, of this group, about 95% had income exceeding Rs. 668 and only 5% had income exceeding Rs. 832. **10**

(b) An insurance company finds that 0.005% of the population dies from a certain kind of accident each year. What is the probability that the company must pay off no more than 3 of 10,000 insured risks against such incident in a given year ? **10**

8. (a) Distinguish between : **10**

(i) Type I error and Type II error.

(ii) Point estimate and interval estimate.

(iii) Parameter and statistic.

(iv) Sample and Population.

(b) A die is thrown 270 times and the results of these throws are given below : **10**

No. of 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.