Roll No. .....

56004

M.B.A. 2 Year 1st Semester

(N.S. 2011-12)

Examination–December, 2011

Quantitative Analysis

Paper-MBA-104

Time : 3 hours ***Max. Marks : 80***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Section-A is **compulsory**. Attempt **one** question from each unit in Section-B. All questions carry **equal** marks.

Section-A

1. Attempt all questions :

(a) What is null hypothesis ? Give example.

(b) What is mean deviation ?

(c) State the difference between correlation and regression.

(d) Under what circumstances would it be appropriate to use median.

(e) What is trend ?

(f) "A cat was sitting on the floor of the house and looking for rats in the kitchen." Count the number of letters in each word of the above statement and make a frequency table by taking the suitable size of the class interval :

(i) of the discrete type

(ii) of continuous type

(g) Comment : "Measures of dispersion and central tendency are complementary to each other in highlighting the characteristics of a frequency distribution."

(h) "A correlation coefficient r=0.8 indicates a relationship twice as close to r=0.4". Comment.

Section-B

Unit-I

2. (a) Calculate the mode from the following data:

Marks	:	10	15	20	25	30	35	40
Frequency	:	8	12	36	35	28	18	9

(b) From the following data on age of employees, calculate the coefficient of skewness and comment upon the results:

Age below (years):	25	30	35	40	45	50	55
Number of Employees :	8	20	40	65	80	92	100

3. Calculate the mean, median and mode for the following data pertaining to marks in statistics. There are 80 students in a class and the test is of 140 marks.

Marks more than:	0	20	40	60	80	100	120
Number of Students :	80	76	50	28	18	9	3

Unit-II

4. A researcher wished to determine if a person's age is related to the number of

hours he or she exercises per week. The data obtained from a sample is given. State your opinion based on Karl Pearson's coefficient of correlation for the data :

Age X	:	18	26	32	38	52	59
Hours Y	:	10	5	2	3	1.5	1

5. Obtain the two lines of regression from the following data and estimate the blood pressure when age is fifty years. Can we also estimate the blood pressure of a person aged 20 years on the basis of this regression equation ? Discuss.

Age in years :	:	**56**	**42**	**72**	**39**	**63**	**47**	**52**
Blood Pressure	:	127	112	140	118	129	116	130

Age in years :	:	**49**	**40**	**42**	**68**	**60**
Blood Pressure	:	125	115	120	135	133

Unit-III

6. (a) Regional transport office recorded 56 road accidents in 200 days in a city. Assume that the number of road accidents follows Poisson distribution.

(i) Find the probability that there is no accident in a day.

(ii) Estimate the number of days with no accident in this period.

(b) Students of a class were given a mechanical aptitude test. Their marks were found to be normally distributed with mean 60 and standard deviation 5. What percentage of students might have scored more than 60 marks ?

7. (a) One thousand bulbs with a mean life 120 days are installed in a new factory. Their length of life is normally distributed with standard deviation 20 days.

How many bulbs will expire in less than 90 days ?

(b) In an intelligence test administered to 1000 students, the average score was 42 and standard deviation 24. Find:

(i) the number of students exceeding a score 50

(ii) the number of students lying between 30 and 54

(iii) the value of the score exceeded by top 100 students.

Unit-IV

8. A marketing agency gives the following information about the age groups of the sample informants and their liking for a particular model of scooter which a company plans to introduce :

Choice — Age Group of Informants

	Below 20	20-39	40-59.	Total
Liked	125	420	60	605
Disliked	75	220	100	395
Total	200	640	160	1,000

On the basis of above data, can it be concluded that the model appeal is independent of the age group of the informants ?

9. Two hundred randomly selected adults were asked whether TV shows as a whole are primarily entertaining, educational or a waste of time (only one answer could be chosen). The respondents were categorized by gender. Their responses are given in the following table :

	Opinion		
Gender	Entertaining	educational	Waste of Time
Female	52	28	30
Male	28	12	50

Is this evidence convincing that there is a relationship between gender and opinion?