M.B.A DEGREE EXAMINATIONS – NOVEMBER/DECEMBER 2008

First Trimester

P07 BA 112: DATA ANALYSIS FOR DECISION MAKING

(Statistical Tables are permitted)

Time: 3 hours   **Maximum Marks: 100**

Answer ALL Questions:-

PART A (1 x 20 = 20 Marks)

Case Study

1) At a newspaper office, the time required to set the entire front page in type was recorded for 50 days. The data, to the nearest tenth of a minute, are given below.

20.8	22.8	21.9	22.0	20.7	20.9	25.0	22.2	22.8	20.1
25.3	20.7	22.5	21.2	23.8	23.3	20.9	22.9	23.5	19.5
23.7	20.3	23.6	19.0	25.1	25.0	19.5	24.1	24.2	21.8
21.3	21.5	23.1	19.9	24.2	24.1	19.8	23.9	22.8	23.9
19.7	24.2	23.8	20.7	23.8	24.3	21.1	20.9	21.6	22.7

Using intervals of 0.8 minutes,

(a) Construct a frequency distribution.

(b) Construct "less than" cumulative frequency distribution and cumulative relative frequency distribution.

(c) Construct a "less than" ogive from the data.

(d) From your ogive, estimate what percentage of the time, the front page can be set in less than 24 minutes.

PART B (10 x 2 = 20 Marks)

2) What is data and a data set?

3) What do you mean by quantitative classification?

4) Define Histogram.

5) State the various measures of variability.

6) Write the addition rule for events that are not mutually exclusive.

7) Find the chance of getting exactly two heads on three tosses on a fair coin.

8) Define null and alternative hypothesis.

9) What do you mean by correlation analysis?

10) State the two different rank sum tests and when they will be used?

11) In regression analysis, what is an estimating equation?

PART C (4 x 15 = 60 Marks)

12) a) (i) Discuss the various sources of data collection. (8)

(ii) Write short notes on Qualitative and Quantitative data. (7)

(OR)

b) (i) Describe briefly the different scales of measurement (8)

(ii) Define secondary data. What are the precautions in accepting the secondary data? (7)

13) a) Calculate the mean, median, mode and quartiles of the following data:

Wages (Rs.):	0-10	10-20	20-30	30-40	40-50	50-60	60-70	
No. of workers :	7	13	18	25	20	12	8	(15)

(OR)

b) (i) From the prices of shares X and Y given below, find out which is more stable in value.

X : 35　54　52　53　56　58　52　50　51　49

Y : 108　107　105　105　106　107　104　103　104　101 (10)

(ii) Explain Range and inter-quartile range and their relative measures. (5)

14) a) (i) A can solve 90% of the problems of a certain book and B can solve 70%. What is the probability that atleast one of them will solve a problem selected at random ? (7)

a) (ii) The probability of a bomb hitting a target is 1/5. Two bombs are enough to destroy a bridge. If six bombs are aimed at the bridge, find the probability that the bridge is destroyed. (8)

(OR)

b) (i) A training program is designed to upgrade the supervisory skills of production-line supervisors. The time taken to complete the program by participants is normally distributed with mean time of 500 hours and S.D of 100 hours. What is the probability that a participant selected at random will require more than 700 hours to complete the program ? (7)

(ii) Set up a sample space for the single toss of a pair of fair dice. From the sample space, find the probability that the sum of the two faces is either 7 or 11. (8)

15) a) (i) The following table gives age(X) in years of cars and annual maintenance cost (Y) (in hundred rupees).

X :   1   3   5   7   9
Y :   15   18   21   23   22

Estimate the maintenance cost for a 4 year – old car after finding the regression equation. (8)

(ii) The sales manager of a large company conducted a sample survery in states A and B taking 400 sample salesmen in each case. The results were:

	State A	State B
Average sales	Rs.2500	Rs.2200
Standard Deviation	Rs.400	Rs.550

Test whether the average sales is the same in the two states at 1% level of significance. (7)

(OR)

b) (i)The data relating to import price (Y) and import quantity (X) in respect of a given commodity are as under :

Y : 2   3   6   5   4   3   5   7   8   7
X : 6   5   4   5   7   10   9   7   8   9

Calculate the coefficient of correlation between X and Y . (8)

(ii) A sample of 300 students of Under- Graduate and 300 students of Post-Graduate of a University were asked to give their opinion towards the autonomous colleges . 190 of the Under-Graduate and 210 of the Post-Graduate favoured the autonomous status. Test at 5% level that opinions of Under-Graduate and Post-Graduate students on autonomous status of colleges are independent . (7)

****