First Semester MBA Degree Examination, December 2011
Statistics for Management

Time: 3 hrs.   Max. Marks:100

Note:1. *Answer any FIVE full questions.*
2. *The use of statistical table is permitted.*

1   a. Explain the importance and scope of statistics. **(06 Marks)**
    b. A series comprises of two numbers and its mean is 25 and GM is 20. Find the values of two numbers. **(06 Marks)**
    c. In a sample study about coffee drinking habits in two towns, the following information was received.
      Town A: Female were 40%, total coffee drinkers were 45% and male non-coffee drinkers were 20%.
      Town B: Male were 55%, male non coffee drinkers were 30% and female coffee drinkers were 15%.
      Represent the data in tabular column. **(08 Marks)**

2   a. What is meant by primary data? Mention the method of collecting primary data. **(05 Marks)**
    b. The following table gives the distribution of monthly income of 600 families in a certain city. Draw less than ogive curve. **(08 Marks)**

Monthly Income (Rs.)	Below 75	75–150	150–225	225–300	300– 375	375–450	450 and over
No. of families	60	170	200	60	50	40	20

    c. Find the missing frequency of the following series, if the value of the arithmetic mean is 33. **(07 Marks)**

X	10	12	60	70	40
F	5	10	?	2	5

3   a. What are the significance of measures of dispersion and what are the various types of measure of dispersion? **(05 Marks)**
    b. The data relating to the market price of the shares of the three companies are as follows:

Company	Average	Standard deviation
ONIDA	150	50
BPL	200	40
SONY	125	20

      From the above, state
      i)   Which company's share has more stability in price fluctuations?
      ii)   Which one would you like to dispose and why? **(07 Marks)**
    c. The following distribution gives the pattern of overtime work per week done by 100 employees of a company. Calculate median, first quartile and seventh decile. **(08 Marks)**

Over time hours:	10–15	15–20	20–25	25–30	30–35	35–40
No. of employees:	11	20	35	20	8	6

4   a. What is meant by 'correlation'? Distinguish between positive, negative and zero correlation. **(05 Marks)**
    b. Calculate the karl pearson's correlation coefficient between the ages of husbands and wives. **(07 Marks)**

Age of Husband (years):	23	27	28	29	30	31	33	35	36	39
Age of wife (years):	18	22	23	24	25	26	28	29	30	32

    c. From the following data complete two regression equations:
$$\sum x = 510, \sum y = 7140; \quad \sum x^2 = 4150, \sum y^2 = 740200; \quad \sum xy = 54900, N = 102$$
(08 Marks)

5 a. What does an index number measure? Explain the nature and uses of index number.

(08 Marks)

b. The following table relates to the tourists arrivals (in million) during 1994 to 2000 in India.

(07 Marks)

Year	1994	1995	1996	1997	1998	1999	2000
Tourists arrival	18	20	23	25	24	28	30

Fit a strait line trend by method of least square and estimate the number of tourist that would arrive in the year 2004.

c. From the following data calculate the price index numbers of 2009 with 2008 as the base year using Paasche's method.

(05 Marks)

Commodity	2008		2009	
	Price	Quantity	Price	Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

6 a. What do you mean by census and sampling? Explain the two types of sampling methods.

(07 Marks)

b. In a survey of 100 readers, it was found 40 reads magazine A, 15 reads magazine B, 10 reads both. What is the probability that, a person reading at least one of the magazines.

(07 Marks)

c. 1000 light bulbs with mean life of 120 days installed in a new factory. Length of life is normally distributed with standard deviation of 20 days. How many bulbs expire in less than 90 days?

(06 Marks)

7 a. Explain the procedure for testing hypothesis? Explain Type – I and Type – II errors.

(08 Marks)

b. Determine the value of median from the following series:

(07 Marks)

Marks	0–10	10–15	15–20	20–25	25–30
No. of students	7	5	8	38	42

c. Find out the standard deviation and coefficient of variation of a series for which,

$\sum x = 50$, $\sum x^2 = 1000$ and N = 5.

(05 Marks)

8 a. What is tabulation of data? Explain various parts of table.

(08 Marks)

b. Find out the Spearman's coefficient of Rank correlation from the following relating to the marks assigned by the two judges in a certain competition.

(06 Marks)

Candidate	A	B	C	D	E	F	G	H	I	J
Judge 1	26	25	38	37	41	45	60	42	53	57
Judge 2	52	25	30	35	48	77	38	43	68	64

c. The following data is the marks scored in statistics paper by the MBA students. Compute the average marks scored.

(06 Marks)

Marks	0–10	10–20	20–30	30–40	40–50
No. of students	5	3	7	25	20

* * * * *