**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**MBA-I Semester Regular Examinations February -2010**
**RESEARCH METHODOLOGY AND STATISTICAL TOOLS**

**Time:3hours** **Max.Marks:60**

**Answer any Five questions**
**All questions carry equal marks**

**- - -**

1. Advice each of the following persons on specific research study that he or she might find useful. Classify each proposed study as reporting, descriptive, explanatory or predictive.
   (i) Manger of a restaurant
   (ii) Plant manager of a shoe factory
   (iii) Human Resource manager at university
   (iv) Office manager for a pediatrician
   (v) Head of an academic department committee.

2.a) Explain the role of SPSS in the data presentation and tabulation.
  b) Explain the following.
   (i) Questionnaire     (ii) Stratified sampling     (iii) Gauss method.

3.a) Discuss the relative merits and problems with:
   (i) Rating and ranking scales
   (ii) Likert and differential scale.
  b) Distinguish between the following.
   (i) Descriptive and cansval studies.
   (ii) Experimental and ex-post factor research designs.

4   Research reports often contain statistical materials of great importance that are presented poorly. Find examples of research reports, annual reports, or government reports that illustrate this point and devise ways to improve their presentation.

5. The cross classification of marks obtained by 105 students in statistical and finance are as given below.

| | | Marks in statistics | | | | |
|---|---|---|---|---|---|---|
| | | 50-54 | 50-59 | 60-64 | 65-74 | Total |
| Marks in Finance | 50-59 | 4 | 6 | 8 | 7 | 25 |
| | 60-69 | - | 10 | 12 | 13 | 35 |
| | 70-79 | 16 | 9 | 20 | - | 45 |
| | 80-89 | - | - | - | - | - |
| | Total | 20 | 25 | 40 | 20 | 105 |

Find the following
- a) Number of students obtaining more than 54 marks in statistics and those obtaining less than 70 marks in finance and
- b) Co-efficient of correlation between the marks obtained in the two subjects.

6. The following is a record of number of bricks laid each day by two masons A and B :

A: 700, 675, 725, 675, 800, 650, 675, 625, 700 and 650

B: 600, 625, 675, 575, 650, 625, 600, 625, 550 and 700

Calculate the co-efficient of variation in each case and discuss the relative consistency of the two masons. If the figures for A where in every case 20 more and those of B in every case 10 more than the figures given above, how would the answer be affected?

7.a) You are given the annual profit figures for a certain firm for the years 2000-2006. Fit a straight line trend to the data and estimate the expected profit for the year 2010

| Year | : | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------|---|------|------|------|------|------|------|------|
| Profit (Rs. Lakhs) | : | 60 | 72 | 75 | 95 | 80 | 85 | 95 |

b) Ten persons were appointed in officer cadre in an office. Their performance was evaluated by giving a test and the marks were recorded out of 100. They were given two months training and another test was held and marks were recorded out of 100.

| Employees | A | B | C | D | E |
|-----------|---|---|---|---|---|
| Before Training | 80 | 76 | 92 | 60 | 70 |
| After Training | 84 | 70 | 96 | 80 | 70 |

By applying the T-test, can it be concluded that the employees have benefited by the training? Use 5% level of significance.

8 The following data has been constructed on the basis of 220 companies classified by the changes in earning and different stock exchanges. Examine whether they are independent or not?

| Changes in Earnings | Stock exchanges | | | |
|---------------------|-------|-------|-------|-------|
| | $S_1$ | $S_2$ | $S_3$ | Total |
| Large decrease | 02 | 17 | 24 | 43 |
| Moderate decrease | 09 | 10 | 14 | 33 |
| Small change | 11 | 11 | 41 | 63 |
| Moderate increase | 06 | 17 | 23 | 46 |
| Large increase | 06 | 20 | 09 | 35 |
| Total | 34 | 75 | 111 | 220 |

Also examine the degree of dependence / independence.