

**M.A. IN PSYCHOLOGY (MAPC)****Term-End Examination****December, 2011****MPC-006 : STATISTICS IN PSYCHOLOGY***Time : 2 hours**Maximum Marks : 50*

*Note : Answer any five questions. Each question carries 10 marks. Only a simple calculator (but, not a scientific calculator) is permitted.*

1. What is parametric statistics ? Describe the basic assumptions and significance of Parametric Statistics. **10**
2. From the following data, find Karl Pearson Coefficient of correlation and interpret it. **10**

X	Y
5	1
10	6
5	2
11	8
12	5
4	1
3	4
2	6
7	5
1	2

3. Discuss Rank Correlation and its application. Compute Spearman Rank Correlation coefficient between marks in Statistics and Mathematics. **3+7=10**

Marks in Statistics : 35 90 70 40 95 40 60  
80 80 50

Marks in Mathematics: 45 70 65 30 90 40 50  
75 85 60

4. Define partial and multiple correlation. From the following data obtain the regression equation of X on Y and Y on X. **4+6=10**

X: 1 2 3 4 5

Y: 1 3 7 10 9

5. Define standard error of the mean and state its function. The achievement scores of 10 students before and after practice are given below. Using 't' test examine whether practice makes a significant difference in the achievement score. **4+6=10**

Before practice : 70 65 90 95 80 90 65 75  
80 60

After practice : 120 80 110 105 110 135  
115 82 110 80

(The Critical 't' value with  $df = 9$  at .05 level = 2.26, .01 level = 3.25).

6. Discuss the characteristics of normal distribution. The details of marks obtained by boys and girls on IQ test is given. Is the difference between the mean marks obtained by boys and girls significant ? 5+5=10

Boys :  $n = 90$ , Mean = 50, SD = 12

Girls :  $n = 100$ , Mean = 55, SD = 7.5

(Critical value at .05 level = 1.96 and at .01 level = 2.58)

7. Describe chisquare and its distribution. The following table gives the classification of students according to the sex and examination results. Test whether examination result is independent of sex of the student. 5+5=10

	Male	Female
Passed	30	40
Failed	20	10

(Critical  $\chi^2$  value with 1 df at .05 level = 3.84, and at .01 level = 6.64)

8. What do you mean by Analysis of Variance ? 10  
Describe the different steps involved in calculating 'F' for one way analysis of variance.

9. Describe Kendall Rank correlation.

The rank of 12 students' on authoritarianism and social status are given below. Find out Kendall Rank Correlation co-efficient -  $\tau$  (tau) for the following data. 4+6=10

Authoritarianism	Social Status
2	3
6	4
5	2
1	1
10	8
9	11
8	10
3	6
4	7
12	12
7	5
11	9

10. Write short notes on *any two* of the followings : 5x2=10

- (a) Type II Error
  - (b) Difference between descriptive statistics and inferential statistics.
  - (c) Level of significance
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