

**School of Liberal Arts**  
**Applied Psychology**  
**ETE - Jun 2023**

Time : 3 Hours

Marks : 50

**Sem II - PSY5022 - Statistical Techniques in Psychology**

*Your answer should be specific to the question asked*

*Draw neat labeled diagrams wherever necessary*

1. Describe the difference between parametric and nonparametric statistical tests. K1 CO1 (2)
2. State the role of statistics in psychology and its importance. K2 CO3 (2)
3. In a study, the scores of participants on a test were as follows: 75, 80, 85, 90, 95. Calculate the mean, median, and mode. K1 CO1 (2)
4. Calculate the value of a correlation coefficient of -0.85 have N=30. K2 CO3 (2)
5. Explain what does a correlation coefficient of zero indicate about the relationship between two variables? K2 CO2 (2)
6. Calculate the point-biserial correlation coefficient for the following data pairs and interpret the results. K3 CO4 (6)  
X Y  
1 0  
0 1  
1 1  
1 0
7. Calculate the Pearson correlation coefficient for the following data sets and interpret the results. K3 CO3 (5)  
A B  
3 5  
6 8  
9 12  
15 18  
10 12
8. Rewrite the difference between Pearson correlation, Spearman's rank correlation, and Kendall's tau correlation. K3 CO1 (5)
9. In a study on the preference for different music genres (rock, pop, jazz, classical), 300 participants were asked to rate their preferences on a scale of 1 to 5. The observed frequencies for the preferences are as follows: K4 CO2 (8)  
Rock Pop Jazz Classical  
Preference 1 40 50 20 10  
Preference 2 30 40 30 20  
Preference 3 20 30 40 50  
Preference 4 10 20 30 40  
Preference 5 10 10 20 30  
Calculate the tetrachoric correlation between the preferences for rock and pop music.
10. Analyze the steps to perform basic descriptive statistics, such as mean, median, and standard deviation, in SPSS. K5 CO4 (8)
11. A research study compares the effectiveness of four different treatment conditions (Condition A, B, C, and D) on reducing anxiety levels. The anxiety scores for participants in each condition are as follows: K4 CO3 (8)  
Condition A: 50, 55, 60, 58  
Condition B: 62, 65, 63, 58  
Condition C: 70, 75, 72, 68  
Condition D: 55, 58, 60, 57

Conduct a two-way ANOVA to examine the main effects of treatment condition and any interaction effects.