



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program : Fifth Semester – 2020

Paper: Statistics in Psychology

Course Code: APSY-357

Part – I (Compulsory)

Time: 15Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Attempt this Paper on this Question Sheet only.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

.....
Signature of Supdt.:

Q.1. Encircle the right answer cutting and overwriting is not allowed. (10x1=10)

1. Branch of statistics by which obtained data is organized and summarized in order to describe its nature is called as

- (a) Explanatory statistics (b) Descriptive statistics
(c) Inferential statistics (d) none of these

2. Appropriate statistical method to compare two population means is

- (a) Relative risk (b) Student's t-test
(c) Chi-square test (d) Odds Ratio

3. The Critical t-value for a one tailed test is _____ than the critical t-value for a two-tailed test with the same degree of freedom

- (a) Cannot be determined (b) Larger
(c) Smaller (d) The same

4. Power of a test is

- (a) the probability of accepting the null hypothesis when it is true.
(b) the probability of accepting the null hypothesis when it is false.
(c) the probability of rejecting the null hypothesis when it is true.
(d) the probability of rejecting the null hypothesis when it is false.

5. The graphic representation of n pairs of X, Y (when X and Y are quantitative) is called

- (a) Scatter diagram (b) frequency distribution
(c) Histogram (d) histogram

6. In the two-group case, the F ratio for the one-way ANOVA equals

- (a) the square root of the *t* value.
(b) the square of the *t* value.
(c) one half of the *t* value.
(d) twice the *t* value.

7. If Pearson's r for a sample is found to be -0.9 , which of the following will be true of the scatterplot for those data?

- (a) All of the points will be fairly close to one straight line.
- (b) The points will be almost randomly scattered.
- (c) The points will exhibit a strong relation, but not a linear one.
- (d) Nothing can be said about the scatterplot from the information given.

8. We have made a type II error if

- (a) Null hypothesis is true and we reject it
- (b) Null hypothesis is true and we accept it
- (c) Null hypothesis is false and we reject it
- (d) Null hypothesis is false and we accept it

9. To perform the Mann-Whitney test,

- (a) the scores are ranked separately for each group.
- (b) the scores are combined into one large group before ranking.
- (c) the two groups must be the same size.
- (d) the ranks for one group are added to the ranks for the other group.

10. If your data have been measured on an ordinal scale, an appropriate way to display the distribution is by means of

- (a) a frequency polygon.
- (b) a histogram.
- (c) a bar graph.
- (d) an ogive.



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Give short answers of the following:

(10x2=20)

1. Describe what happens to standard deviation (SD) when a constant is added to each value in a distribution and what happens if a constant is multiplied to each value in a distribution.
2. Compute the median of the data set, 3,8,9,12,12, 12,16,21,19, 22, 25, 26
3. Define Z-score and its purpose.
4. Define directional and non-directional hypothesis.
5. Score of students is distributed with mean 100 and SD=10, find the Z-score of students whose actual score is 90.
6. Define level of significance and p-value.
7. Differentiate between Pearson and Spearman correlation.
8. What is Normal distribution and its properties?
9. Write down name of common Non-parametric tests.
10. What do you mean by simple and multiple regression?

Q.3. Give brief answers of the followings.

(3x10=30)

1: A researcher wished to investigate whether or not college education can affect IQ. She gathered 10 students and administered an IQ test in 1st and final semester of the college education. The data is as below:

1 st semester	Final Semester
101	90
103	102
100	105
90	99
103	96
102	110
110	116
113	129
112	118
118	119

Test her hypothesis using an appropriate test at 1% level of significance.

Marks 10

2: For the given data below, the marks in two subject's "X" and "Y"

X	56	45	83	25	52	78	38	40	71	89
Y	43	89	42	73	34	51	82	28	39	85

Compute Pearson correlation coefficient.

Marks 10

3: We have the following information with 4 treatments and total observation 28, complete the missing values and make a decision at 5% level of significance.

Source of Variation	df	Sum of squares (SS)	Mean SS	F-Ratio
Between				0.51
Within			54.2	
Total				

Marks 10