

B.Sc. DEGREE END SEMESTER EXAMINATION – MARCH 2022
SEMESTER – 2: STATISTICS (COMPLEMENTARY FOR PSYCHOLOGY)
COURSE: 20U2CPSTP02 – STATISTICAL TOOLS

(For Regular - 2020 Admission)

Time: Three Hours

Max. Marks: 75

PART A

Answer all questions. Each question carries 1 mark

1. The percentage of observations below the third quartile is
2. The coefficient of range is given by
3. The measure of dispersion which is amenable for further mathematical treatment is
4. The second central moment gives the value of
5. Bowleys measure of skewness ranges from
6. For a mesokurtic distribution, the beta value is
7. Age of husband and age of wife is an example ofcorrelation
8. The value of correlation coefficient r lies in the interval
9. The two regression lines are perpendicular when
10. The product of the regression coefficients give the value of (1 x 10 = 10)

PART B

Answer any eight of the following questions. Each question carries 2 marks

11. Define the quartile deviation.
12. Define variance.
13. Define coefficient of variation.
14. What is the condition for a distribution to be symmetric?
15. If 25%, 50% and 75% of observations are less than 30, 60 and 75 respectively, find the value of Bowley's coefficient of skewness?
16. Roughly sketch the curves of leptokurtic, mesokurtic and platykurtic distributions.
17. Define simple correlation.
18. Give two uses of scatter diagram
19. How can we find the value of correlation coefficient from the regression coefficients?
20. Find the values of \bar{X} and \bar{Y} if the regression lines are $x + y = 10$ and $3x + y = 20$

(2 x 8 = 16)

PART C

Answer any five of the following questions. Each question carries 5 marks

21. Differentiate between absolute and relative measures of dispersion? Give example for each.
22. Calculate the Coefficient of range from the following
23, 15, 63, 32, 18, 11, 56, 45, 67, 43, 76, 56, 89, 60
23. Two samples of sizes 40 and 50 respectively have the same mean 55 but different standard deviations 12 and 15 respectively. Calculate the standard deviation of combined group.

24. Differentiate between skewness and Kurtosis.
25. The first four raw moments of a distribution about zero are 3, 24, 76 and 240 respectively. Comment on Kurtosis of the distribution.
26. Distinguish between Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient
27. Explain how will you identify the two given regression lines?

(5 x 5 = 25)

PART D**Answer any two of the following questions. Each question carries 12 marks**

28. Calculate the Quartile deviation from the following data

Class:	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
Frequency:	12	26	42	30	26	14

29. What are the desirable properties of a good measure of dispersion? Compare the merits and demerits of Quartile deviation and Standard deviation.
30. Calculate the correlation coefficient between Anxiety index and Performance index

Anxiety Index:	18	25	27	32	22	32	23	18	20
Performance Index:	32	30	24	30	40	15	30	45	50
31. The two regression lines are $8x - 10y + 66 = 0$ and $40x - 18y - 214 = 0$
Find (1) Mean value of X and Y (2) Coefficient of correlation between X and Y

(12 x 2 = 24)
