



QP CODE: 20101155



20101155

Reg No : .....

Name : .....

**B.Sc. DEGREE (CBCS) EXAMINATION, NOVEMBER 2020**

**Second Semester**

B.Sc Psychology Model I

**Complementary Course - ST2CMT22 - STATISTICAL TOOLS**

2017 ADMISSION ONWARDS

FC0DF960

Time: 3 Hours

Max. Marks : 80

**Part A**

*Answer any **ten** questions.*

*Each question carries 2 marks.*

1. What are the advantages of Range over mean deviation?
2. Explain the term variance, what is its importance?
3. Find the standard deviation of the data 1,2,3,4,5,6.
4. Give the application of coefficient of variation.
5. First central moment is always zero, True or False. Explain
6. Define skewness. What is its significance?
7. What is the difference between positive and negative skewness?
8. Distinguish between skewness and kurtosis.
9. When the coefficient of correlation is zero what does it mean?
10. Give any two properties of regression coefficients.
11. What is the importance of sign of regression coefficients?
12. Explain the term dependent and independent variable in regression.

(10×2=20)

**Part B**

*Answer any **six** questions.*

*Each question carries 5 marks.*

13. What are the desirable properties of a good measure of dispersion?





14. Define Quartile deviation. Find the QD and coefficient of QD for the following data.  
25, 18, 32, 20, 25, 48, 72, 24, 50, 25
15. Explain the main difference between the mean deviation and standard deviation. Show that standard deviation is independent of change of origin.
16. Establish the relationship between central moments and raw moments about zero.
17. Explain the effect of change of origin and scale on central moments.
18. Find the moment measure of skewness for the following data, and interpret it.

Size	:	10	12	15	18	20	25
Frequency	:	2	3	8	10	6	4

19. Explain the use of scatter diagram in correlation analysis.
20. The table below shows the number of absences,  $x$ , in a course and the final exam grade,  $y$ , Find the correlation coefficient and interpret your result.  

X:	1	0	2	6	4	5	3
Y:	95	90	90	55	70	80	85
21. What is Spearman's rank correlation coefficient? What are the advantage of rank correlation over Karl Pearson correlation coefficient? Explain the method of calculating Spearman rank correlation coefficient in the case of tied rank

(6×5=30)

### Part C

*Answer any two questions.*

*Each question carries 15 marks.*

22.
  - (a) Distinguish between absolute and relative measures of dispersion.
  - (b) Find the mean deviation about mean and standard deviation  

Score :	5	10	15	20	25	30	35
frequency :	14	28	65	90	65	4	1
23.
  - (a) Explain the concept skewness. Briefly explain the different types of skewness.
  - (b) Briefly explain the various measures of skewness.
  - (c) Find the moment measure of skewness of the data 3, 20, 7, 12, 4, 3, 39, 1.
24.
  - (a) Define kurtosis.
  - (b) Briefly explain the various measures of kurtosis.
  - (c) Find the coefficient of skewness of the data.

Salary :	10 – 20	20 – 30	30- 40	40 – 50	50 – 60
Frequency :	24	38	65	90	70





25. Following data relate to the duration of relief reported by a group of 10 persons suffering from allergy, on giving various dosages of a new drug. Calculate (i) Karl Pearson's and (ii) Spearman's correlation coefficients and identify the type of correlation

<i>Dosage</i>	3	3	4	5	6	6	7	8	8	9
<i>Duration of Relief</i>	9	5	12	9	14	16	22	18	24	22

(2×15=30)

