B.Sc. DEGREE (CBCS) EXAMINATION, MAY 2019

Second Semester

B.Sc Psychology Model I

Complementary Course - **ST2CMT22 - STATISTICAL TOOLS**

2017 ADMISSION ONWARDS

1969632E

Maximum Marks: 80   **Time: 3 Hours**

Part A

Answer any **ten** questions.

Each question carries **2** marks.

1. Explain the term Dispersion

2. Define Range

3. Compare mean deviation and standard deviation

4. Give the formula for coefficient of variation

5. If $m'1(4) = 2$, $m'2(4) = 16$ then find the mean and variance of the data.

6. If the first three raw moments about 5 are 2, 20, 40 then find the first 3 central moments

7. Compute the Person's measure of skewness for the data 1,2,3,4,5,6

8. Which is the best measure of skewness. Why?

9. Define Scatter diagram. Mention its use.

10. How do you interpret correlation coefficient?

11. What is the limits of rank correlation?

12. Explain the term regression

$(10 \times 2 = 20)$

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Compute the mean deviation about the median from the frequency distribution given below.

Size:	5	8	13	20	25	30	40
Freq:	2	10	20	35	18	7	5

14. Diffrentiate between mean deviation and standard deviation with suitable examples.

15. Distinguish between absolute and relative measures of dispersion with examples.

16. If the first four moments about 4 are -1, 17, -3, 40 then find the first four moments about 2

17. Calculate the Bowley's measure of skewness of the following data

Class:	0-5	5-10	10-15	15-20
Frequency:	*34*	*38*	*65*	*42*

18. Define raw and central moments. Explain how you would use moments in studying skewness and kurtosis.

19. Explain regression and correlation with examples.

20. Calculate the correlation coefficient between X and Y using the following data.

		X	Y
No. Of observations	.....	15	15
A.M	....	25	18
Sum of squares of deviation from mean		136	138
Sum of product of deviation of X and Y series from their mean....		*122*	

21. Given regression equations; 8x-10y+66=0 & 40x-18y=214,
    1) Identify the two regression lines
    2) Calculate correlation coefficient.

$(6×5=30)$

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Calculate the mean deviation about median and compare the variability of the two series *X and Y*

X	*:*	*725*	*700*	*750*	*675*	*725*	*625*	*675*	*800*	*625*	*725*	*700*	*725*	*675*
Y	*:*	*575*	*625*	*600*	*575*	*675*	*600*	*650*	*575*	*625*	*550*	*680*	*550*	*560*

23. Define skewness and Kurtosis. Calculate the Karl Pearson moment coefficient of skewness and kurtosis for the following data

Class	*:*	*20-10*	*10-20*	*20-30*	*30-40*
Frequency	*:*	*1*	*3*	*4*	*2*

24. Define Kurtosis. Obtain the value of the moment measures of Kurtosis and interpret its value for the *data on the number of defective batteries on each of 150 flashlights:*

Number of defective	0	1	2	3	4
Number of flashlights	26	51	47	16	10

25. *Price of wheat (x) and cereals(y) at twelve successive seasons are given below.*

x	87	84	88	102	101	84	72	84	83	98	97	100
y	88	79	83	97	96	90	82	84	88	100	80	102

1. *Fit a line of regression of Y on X.*

2. *Suggest what value of Y will be when X is expected to be 110?*

(2×15=30)