M. Sc. DEGREE (C.S.S.) EXAMINATION, NOVEMBER 2021
[2021 Admissions Regular and 2020 Admissions Improvement & Supplementary]
SEMESTER I - CORE COURSE (CHILD DEVELOPMENT)
RM1C04TM20 - RESEARCH METHODS & STATISTICS I

Time : 3 Hours   Maximum Weight : 30

Part A

I. Answer any Eight questions. Each question carries 1 weight   **(8x1=8)**

1. Define research.

2. Define Exploratory Research Design.

3. List characteristics of research design.

4. Differentiate between an open-ended and close-ended questionnaires.

5. Explain the procedure for calculating median from a continuous frequency table.

6. Define quartile deviation and range of a set of observations.

7. What is Coefficient of variation?

8. Distinguish between simple and multiple regressions.

9. Why are there two regression lines?

10. Briefly explain scatter diagram.

Part B

II. Answer any Six questions. Each question carries 2 weight   **(6x2=12)**

11. Differentiate independent and dependent variables.

12. Compare questionnaire and interview schedule.

13. Compare Mean Deviation and Standard Deviation of dispersion.

14. Calculate the coefficient of variation for the data given below.

Class	0-10	10-20	20-30	30-40	40-50
Frequency	8	15	30	16	1

15. Write the merits of arithmetic mean.

16. Given the following data, find the most probable value of x when y = 30

	x	y
Mean	27.6	14.8
S.D.	40	20

   $r = 0.8$

17. Find Karl Pearson's coefficient of correlation.

Year	1964	1965	1966	1967	1968	1969	1970	1971
Import	46	68	72	75	80	70	93	100
Export	64	50	39	48	52	46	40	30

18. Calculate coefficient of correlation.

x	2	3	4	5	6	7	8
y	4	5	6	12	9	5	4

Part C

III. Answer any Two questions. Each question carries 5 weight **(2x5=10)**

19. What are the objectives of the research design? Explain various types of research design.

20. Describe the characteristics of a good research tool.

21. (a) Define co-efficient of variation.

(b) A factory produces two types of electric lamps A and B. In an experiment relating to their lives, the following data was obtained.

Life in Hours	No. of lamps	
	Type A	Type B
500-700	5	4
700-900	11	30
900-1100	26	12
1100-1300	10	8
1300-1500	8	6

Compare the variability of the lives of the two types of lamps using co-efficient of variation.

22. Find the rank correlation coefficient from the following data.

x	48	33	40	9	16	16	65	24	16	57
y	13	13	24	6	15	4	20	9	6	19