STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.

(For candidates admitted during the academic year 2019-20 and thereafter)

COURSE CODE:19CM/AC/BS25

B.COM. DEGREE EXAMINATION APRIL 2021

COMMERCE – SHIFT II

SECOND SEMESTER

COURSE : ALLIED – CORE

PAPER : BUSINESS STATISTICS

TIME : 90 MINUTES **MAX. MARKS: 50**

SECTION – A

Answer all questions: **(3 x 2 = 6)**

1. Define Karl Pearson's coefficient of correlation.
2. State the uses of Chi-Square test.
3. If r = 0.917 and N = 10, find out the probable error of the coefficient of correlation and determine the limits for population r.

SECTION – B

Answer any Three Questions: **(3 x 8 = 24)**

4. 1000 students at college level were granted according to their I.Q. and the economic condition of their homes. Use Chi-Square test to find out whether there is any association between economic condition at home and I.Q. Level.

	I.Q.		
Economic Condition	**High**	**Low**	**Total**
Rich	460	140	600
Poor	240	160	400
Total	700	300	1000

Test at 5% level of significance.

5. Calculate the trend values by the method of 4-yearly moving averages:

YEAR	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
PRODUCTION	464	515	518	467	502	540	557	571	586	612

6. Find two regression equation for the following two series, what is most likely value of X when Y = 20 and most likely value of Y when X = 22.

X	35	25	29	31	27	24	33	36
Y	23	27	26	21	24	20	29	30

7. 10 workers are selected at random from a large number of workers in a factory. The number of items produced by them on a certain day was found to be:
   51 52 53 55 56 57 58 59 59 60
   In the light of these data, would it be appropriate to suggest that the mean of the number of items produced in the population is 58? (5% value of t for 9 d.f. is 2.262).

SECTION – C

Answer any One Question: **(1 x 20 = 20)**

8. The following data represents the number of units of production per day turned out by 5 different workers using 4 different types of machines: (use coding method subtracting 40 from the give numbers).

	Machine types			
	A	**B**	**C**	**D**
Worker 1	44	38	47	36
2	46	40	52	43
3	34	36	44	32
4	43	38	46	33
5	38	42	49	39

   a) Test whether the mean productivity is the same for different machine types.
   b) Test whether the 5 men differ with respect to mean productivity.

9. Calculate Karl – person's coefficient of correlation from the following data:

	X					**Total**
Y	**200 – 300**	**300 – 400**	**400 – 500**	**500 - 600**	**600 - 700**	
10 – 15	-	-	-	3	7	**10**
15 – 20	-	4	9	4	3	**20**
20 – 25	7	6	12	5	-	**30**
25 – 30	3	10	19	8	-	**40**
Total	**10**	**20**	**40**	**20**	**10**	**100**

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