STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.
(For candidates admitted during the academic year 2019– 20)

SUBJECT CODE: 19CO/AC/QT15

B.Com (CS) DEGREE EXAMINATION NOVEMBER 2019
CORPORATE SECRETARYSHIP
FIRST SEMESTER

COURSE : ALLIED – CORE
PAPER : QUANTITATIVE TECHNIQUES FOR BUSINESS
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS: **(10 x 2 = 20)**

1. Define positive and negative correlation.
2. What is moving average?
3. What is large sample?
4. Define chi-square test.
5. What is Analysis of variance?
6. Find the rank correlation coefficient between the given ranks

Ranks in English	:	1	2	3	4	5
Ranks in G.K	:	2	4	1	5	3

7. Apply the method of semi-average of measuring trend for the following data.

Year	:	1998	1999	2000	2001	2002	2003
Sales	:	20	24	22	30	28	32

8. A sample of 26 bulbs gives a mean life of 990 hours with a S.D of 20 hour. The manufacturer claims that the mean life of bulbs is 1000 hours. Is the sample not up to the standard? (Tabulated 't' at 5% level with 25 degrees of freedom is 1.71).

9. A sample of 400 students is found to have a mean height of 171.38 cm. Can it be reasonably regarded as a sample from a large population with mean height of 171.17 cm and S.D 3.3 cm.

10. You are given the following information about advertisement and sales. Find out co-efficient on X on Y.

	Advertising expenditure (Rs. Crores)	Sales (Rs. Crores)
Mean	20	120
Standard deviation	5	25
Correlation coefficient	0.8	

SECTION – B

ANSWER ANY FIVE QUESTIONS: **(5 x 8 = 40)**

11. Differentiate between correlation and regression.
12. What is time series? What are its components?
13. Eight students got the following marks in Economics and Statistics. Calculate the rank correlation coefficient.

Mark in Economics	:	25	37	56	12	07	36	23	11
Marks in Statistics	:	76	90	98	69	54	82	67	52

…2

14. Calculate the 3 years moving average for the following data.

Year	: 1995	1996	1997	1998	1999	2000
Sales(Rs.Lakhs)	: 23	25	27	25	26	28

15. The following grades are given to a class of 100 students:

Grade	A	B	C	D	E
Frequency	14	18	32	20	16

Test the hypothesis at the 5% level that the distribution of grade is uniform

16. Two random samples are drawn from normal population and their values are:

A : 25 37 56 12 07 36 23

B : 76 90 98 69 60 82 67 50

Obtain estimates of the variance of the population and test whether two populations have same variance

17. Samples of two different types of bulbs were tested for lenth of life and the following data were obtained:

	Type –I	Type – II
Sample size	8	7
Sample mean	1234 hrs	1136 hrs
Sample SD	36 hrs	40 hrs

Is the difference in mean life of the two types of the bulbs significant?
(table value v=13 at 5% level is 2.16)

SECTION – C

ANSWER ANY TWO QUESTIONS: (2 x 20 = 40)

18. Fit a straight line trend by the method of least squares and estimate the production or the year 2000.

Year	: 1992	1993	1994	1995	1996	1997	1998
Production in tonnes	: 70	75	90	89	94	98	100

19. Calculate Karl Pearson's coefficient of correlation.

X	: 25	10	20	32	50	28	26	14	12	13
Y	: 15	12	19	26	23	22	13	10	15	5

20. The following data is collected on two characteristics

	Smokers	Non-Smokers
Literates	83	57
Illiterates	45	65

Based on this can you say that there is no relation between the habit of smoking and literacy? (table value of χ^2 -test at 5% level is 3.84)

21. Three varieties of coal were analysed by four chemists and the ash content in the varieties was found to be under

Varieties	Chemists 1	Chemists 2	Chemists 3	Chemists 4
A	8	5	5	7
B	7	6	4	4
C	3	6	5	4

Do the varieties differ significantly in their ash content?

****