LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Com. DEGREE EXAMINATION – **CORPORATE SECRETARYSHIP**

FIRST SEMESTER – **NOVEMBER 2019**

CO 1104 – FUNDAMENTALS OF STATISTICS

Date: 05-11-2019   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

SECTION A

Answer the following: **10 x 2 = 20**

1. Mention two applications of statistics?

2. What are the merits of arithmetic mean?

3. Define correlation.

4. State the regression equation of x on y and y on x.

5. Mention the measures of dispersion.

6. Calculate the arithmetic mean of the following: 40,50,30,60,70,80,40,50,60,90.

7. The mean of 200 items is 60. It was discovered later that 182 was wrongly taken as 82.Find the correct mean.

8. Calculate range and coefficient of range: 61,62,63,68,65,67,64,66.

9. Calculate skewness: Mean is 3.28; Mode is 3; Standard deviation is 1.35.

10. Calculate correlation coefficient: bxy = 1.029; byx=0.91.

SECTION B

Answer any FOUR of the following: **4 x 10 = 40**

11. Differentiate between Regression and Correlation.

12. Explain the components of Time Series.

13. (a) Explain the Limitation of Statistics.

    (b) Explain the methods of central tendency.

14. Using three year moving averages, determine the trend and short- term fluctuations.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Production (in tonnes)	21	22	23	25	24	22	25	26	27	26

15. Estimate the value of sales for the year 2009 by using the method of least square. Find the trend values.

Year	2003	2004	2005	2006	2007
Sales(Quintals)	100	120	110	140	80

16. Find the Quartile Deviation and its Coefficient for the following distribution:

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	8	20	25	30	12	5

17. Determine the Seasonal Indices for the following using the method of Simple Averages:

Quarter Year	I	II	III	IV
2014	72	68	80	70
2015	76	70	82	74
2016	74	66	84	80
2017	76	74	84	78
2018	78	74	86	82

SECTION C

Answer any TWO of the following: **2 x 20 = 40**

18. Calculate Mean, Median and Mode and verify empirical relation:

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	8	12	18	8	6	5	4

19. From the following data, find out which share is more stable in its value:

X	36	55	51	53	58	60	48	50	40	49
Y	108	107	105	105	102	108	104	103	107	101

20. Ten competitors of a beauty contest are ranked by three judges in the following order:
    Use Rank Correlation.

Judge1	1	6	5	10	3	2	4	9	7	8
Judge2	3	5	8	4	7	10	2	1	6	9
Judge3	6	4	9	8	1	2	3	10	5	7

21. The following table gives the aptitude test scores and productivity indices of 10 workers selected at random:

Aptitude scores(X)	60	62	65	70	72	48	53	73	65	82
Productivity Index(Y)	68	60	62	80	85	40	52	62	60	81

Find the two Regression Equations and estimate:
   (a) The productivity index of a worker whose test score is 92
   (b) The test score of a worker whose productivity is 75
   (c) Coefficient of correlation.

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