LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Com.,B.B.A DEGREE EXAMINATION – **CORPORATE SECRETARYSHIP& BUSI.ADMIN.**

SECONDSEMESTER – APRIL 2018

ST 2105- FUNDAMENTALS OF STATISTICS

Date: 28-04-2018 Dept. No. Max. : 100 Marks
Time: 01:00-04:00

SECTION -A

Answer ALL the questions. **(10 x 2 = 20 Marks)**

1. Define Statistics.
2. What are the limitations of Statistics?
3. What are the various methods of measuring central tendency?
4. Define the term harmonic mean.
5. Define Range & its coefficient
6. Find the Standard deviation of first 10 natural numbers.
7. State the properties of correlation coefficient.
8. Define positive and negative correlation.
9. Define Time Series.
10. Write short note on moving average method.

SECTION B (5 X 8 = 40 Marks)

Answer any FIVE questions

11. Describe the origin and development of Statistics.

12. Discuss the various diagrams in presenting statistical data.

13. Represent the following data by suitable two-dimensional diagram:

Price of commodity	A Rs.2 per unit	B Rs.3 per unit
No. of unit solid	40	20
Value of raw material	Rs.26	Rs.24
Other expenses	Rs.32	Rs.12
Profits	Rs.22	Rs.13

14. Calculate the arithmetic mean for the following data:

M arks	35	40	45	50	55	60
No.of students	12	18	24	16	6	4

15. Calculate standard deviation and coefficient of variation for the following data

Class	0-10	10-20	20-30	30-40	40-50	50-60	60 -70
frequency	8	12	17	14	9	7	4

16.Find the correlation coefficient between production and sales of a factoryfrom the data given below:

Production (in tonnes)	50	55	63	67	65	60	61
Sales (in thousands)	35	36	42	51	54	53	55

17.Explainthe components of time series.

18.Using Three yearly moving averages,determine the trend and short term fluctuations:

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sugar Production	42	45	48	46	47	49	50	52	54	58

SECTION C (2 X 20 = 40 Marks)

Answer any TWO questions

19. Calculate Mean, Median and Mode and verify empirical relation from the following data:

Marks	0 - 10	10 – 20	20 - 30	30- 40	40 - 50	50 – 60	60 – 70	70 – 80	80 – 90
No.of students	6	9	7	5	10	15	20	13	12

20. Calculate Bowley's coefficient of skewness for the following data:

Variable	0 -10	10-20	20-30	30-40	40-50	50-60
No of persons	10	20	30	40	40	30

21. (a) Calculate Rank Correlation coefficient for the following ranks:

Rank X	1	2	3	4	5	6	7	8	9	10	11	12
Rank Y	12	9	6	10	3	5	4	7	8	2	11	1

b) You are given the following data:

	X	*Y*
Arithmetic Mean	36	85
Standard Deviation	11	8

Correlation coefficient between X and Y = 0.66

(a) Find the two regression equations.

(b) Estimate value of X when Y = 75.

(10+10)

22. Calculate Seasonal Indices by the ratio-to-moving average method from the following data:

Year / *Quarter*	*2011*	*2012*	*2013*	*2014*
I	30	35	38	40
II	35	37	42	45
III	36	40	46	44
IV	34	46	47	45

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