



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

U.G. DEGREE EXAMINATION –CORP.SEC. & BUSI. ADMIN.

THIRD SEMESTER – APRIL 2018

## ST 3105- INTRODUCTION TO STATISTICS

Date: 05-05-2018  
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

### SECTION -A

Answer ALL questions.

(10 x 2 = 20 marks)

1. What are the advantages of classification of data?
2. State the different types of diagrams.
3. Write two merits of arithmetic mean.
4. Find the median for the following data: 35, 45, 36, 46, 20.
5. Define mean deviation.
6. What do you understand by Standard deviation?
7. Define the positive skewness.
8. Explain the concept of correlation between two variables.
9. Write a brief note on Rank Correlation.
10. What are the various measures of trend?

### SECTION - B

(5 X 8 = 40 Marks)

Answer any FIVE questions

11. Explain the various functions of Statistics?
12. Discuss the various diagrams in presenting statistical data.
13. Represent the following data by a Sub-Divided Bar Diagram about the Distribution of daily expenditures of 2 families A and B

<i>Item</i>	<i>Family A</i>	<i>Family B</i>
Rent	4500	5000
Food	4000	4500
Clothing	2000	2500
Education	1500	2000
Savings	1500	1000
Miscellaneous	2000	2000

14. From the following data, find out which product is more stable in prices.

<i>Prices of product A (Rs.)</i>	20	22	19	23	16
<i>Prices of product B (Rs.)</i>	10	20	18	12	15

15. Calculate arithmetic mean for the following data:

<i>Marks</i>	10	20	30	40	50	60
<i>No. of students</i>	8	12	20	10	7	3

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

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

17. Differentiate between correlation and regression analysis.

18. 500 Candidates appeared for a competitive examination and 60 of them succeeded. 45 received special coaching and out of them 40 candidates succeeded. Prepare a 2 x 2 contingency table and using Yule's coefficient, discuss whether special coaching is effective or not.

**SECTION- C**

**(2 X 20 = 40 Marks)**

**Answer any TWO questions**

19 Calculate Mean Median and Mode and verify empirical relation:

Class Interval	1 – 10	11 – 20	21 – 30	31 – 40	41 - 50	51 – 60	61 – 70	71 – 80
Frequency	9	10	12	15	8	6	6	5

20. 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	10	12	15	13	14	9

21. From the following data obtain the two regression equations. Calculate the coefficient of correlation and estimate the sales when purchase is 100:

Sales	94	97	103	124	67	124	54	73	111
Purchases	97	78	69	98	76	91	39	61	80

22. a) Using three year moving averages determine the trend and short term fluctuations:

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Production	26	23	27	29	32	35	36	29	30	32

b) Find the seasonal variations by simple average method for the following data

Year/ quarter	I	II	III	IV
1989	30	40	36	34
1990	34	52	50	44
1991	40	58	54	48
1992	54	76	68	62

(10+10)

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