



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

## B.Com. DEGREE EXAMINATION – COMMERCE

SECOND SEMESTER – APRIL 2017

### ST 2101- BUSINESS STATISTICS

Date: 25-04-2017  
01:00-04:00

Dept. No.

Max. : 100 Marks

#### SECTION A

Answer ALL questions.

(10 x 2 = 20 Marks)

1. What are the limitations of Statistics?
2. State the different types of diagrams.
3. Define the term harmonic mean.
4. What are the various methods of measuring central tendency?
5. Write short notes on variance?
6. Write a short note on Rank Correlation?
7. What are Regression Equations?
8. What are the components of time series?
9. State the advantages of Index numbers.
10. Define extreme point of the linear programming problem.

#### SECTION B

Answer any FIVE questions (5 X 8 = 40 Marks)

11 Explain the functions of statistics in business studies.

12. Represent the following data by a Sub-Divided Bar Diagram about the Distribution of daily expenditures of 2 families A and B

<i>Income</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

13. Calculate the arithmetic mean for the following data:

X	35	40	45	50	55	60
F	12	18	24	16	6	4

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. What is Quartile Deviation? State its merits and demerits.

16 Explain the concept of Karl Pearson's Coefficient of Correlation?

17. Calculate the three yearly moving averages of the following data and also calculate Short-Term Fluctuations.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Production(in tonnes)	52	56	54	58	57	55	53	52	50	54

18. Explain the scope of operation research in business activities.

**SECTION C**

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

**Answer any TWO questions**

19.a) What are the advantages of Graphical Representation?

b) 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

(5+15)

20.a) Define skewness. What are the measures of skewness?

b) Calculate Karl Pearson's coefficient of skewness:

Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
Frequency	6	12	22	48	56	32	18	6

(5+15)

21.a) Calculate Coefficient of Rank Correlation from the following data:

Marks in Science	40	46	54	60	70	80	82	85	85	90	95
Marks in Maths	45	45	50	43	40	75	55	72	65	42	70

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)

22.a) Construct the cost of living index number from the following group data:

Group	Weights	Group Index Number for a given year
Food	47	247
Fuel and light	7	293
Clothing	8	289
House rent	13	100
Miscellaneous	14	236

b) Solve the following L.P. problem by graphical method.

Maximize  $Z = 5x + 7y$

Subject to constraints,

$x + y \leq 4$

$3x + 8y \leq 24$

$10x + 7y \leq 35$

$x, y \geq 0$

(8+12)

