



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

## B.B.A. DEGREE EXAMINATION – BUSINESS ADMINISTRATION

THIRD SEMESTER – APRIL 2017

### ST 3105- INTRODUCTION TO STATISTICS

Date: 03-05-2017  
09:00-12:00

Dept. No.

Max. : 100 Marks

#### SECTION – A

Answer ALL questions.

(10 x 2 = 20 marks)

1. Define classification.
2. Discuss the various diagrams in presenting statistical data.
3. Explain the merits of geometric mean.
4. Find the arithmetic mean for the following data: 25, 25, 26, 36, 30, 28, 32, 37, 33
5. Define Range & its coefficient.
6. Define standard deviation.
7. State the properties of correlation coefficient.
8. State any two limitations of rank correlation.
9. What are the uses of time series?
10. Define lule's coefficients of association.

#### SECTION – B

(5 X 8 = 40 Marks)

Answer any FIVE questions

b. Describe the origin and development of Statistics.

12. Write short notes on:

(a) Systematic sampling (b) Multi-stage sampling

13. Draw a Histogram and Frequency Polygon on the basis of the following data:

Marks	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
No. of students	6	7	12	14	15	9	6	4

14. Find the arithmetic mean of the following data

Weight	10	20	30	40	50	60	70
No. of persons	8	16	20	10	6	4	2

15. Two samples of size 40 and 60 have the same mean 63, but different standard deviation 20 and 18 respectively. Find the standard deviation of the combined sample

16. Calculate Correlation Coefficient between height (in inches) and weight (in kg) from the data given below:

Height	60	63	65	54	68
Weight	50	53	60	67	70

17. Describe the different methods of measuring Seasonal Variation.

18. 200 Candidates appeared for a competitive examination and 60 of them succeeded. 35 received special coaching and out of them 20 candidates succeeded. Prepare a 2X2 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.(a) Calculate the mean, median and mode from the following data and verify the empirical relationship.

C.I	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
F	5	9	12	15	10	9	7	5	6	4

(b) Differentiate between Positive & Negative Skewness. (15 + 5)

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

(20)

21(a). Ten competitors in a beauty contest are ranked by 3 judges in the following order:

1 <sup>st</sup> judge	2	7	1	5	3	4	8	6	10	9
2 <sup>nd</sup> judge	10	6	3	8	7	2	9	5	4	1
3 <sup>rd</sup> judge	2	5	6	9	1	3	7	4	8	10

Use rank correlation coefficient to determine which pair of judges has the nearest approach to common taste in beauty

(b) Differentiate between correlation and regression analysis.

(12+8)

22. a) Calculate the trend values by the method of moving averages assuming a four – yearly cycle, for the following data.

Year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Sugar production	37.4	31.1	38.7	39.5	47.9	42.6	48.4	64.6	58.4	38.6	51.4	84.4

b) Fit a straight line trend by the method of least squares for the flowing data. Assuming that the same rate of change continues, what would be the predicted earnings for the year 1995?

Year	1987	1988	1989	1990	1991	1992	1993	1994
Earnings	38	40	65	72	69	60	87	95

(10+10)

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