



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – STATISTICS

FIRST SEMESTER – NOVEMBER 2014

ST 1502/ST 1500 - STATISTICAL METHODS

Date : 07/11/2014
Time : 01:00-04:00

Dept. No.

Max. : 100 Marks

PART – A

Answer **ALL** the questions:

(10 x 2 = 20 Marks)

1. Distinguish between Primary data and Secondary data.
2. What is meant by classification?
3. Define Co-efficient of variation.
4. Sketch the graph for positive skewness, negative skewness and symmetric distribution.
5. Write down the Normal equations for fitting the curve $Y = ab^X$
6. What do you mean by curve fitting?
7. Briefly explain Scatter diagram.
8. Why there are two regression equations?
9. How can the frequencies for various attributes be displayed in a 2x2 contingency table?
10. You are given (A) = 90 ; (AB) = 40; N= 150; and (b) = 80. Complete (2x2) Contingency table.

PART – B

Answer any **FIVE** questions:

(5x8=40 Marks)

11. Mention the general rules for framing a questionnaire?
12. Explain the difference between exclusive and inclusive class intervals.
13. Find Quartile Deviation for the following distribution of wages of employees in a factory.
Wages (Rs.'000): 0 -10 10-20 20-30 30-40 40-50 50-60 60-70
No.of Employees: 5 8 10 6 4 5 7
14. Explain the term Kurtosis.
15. The following data relate to the profit earned by a company from 1998 to 2004. Fit a straight line trend by the method of least squares to the data.
Year : 1998 1999 2000 2001 2002 2003 2004
Profit(in '000): 70 75 90 91 95 98 100
16. What do you mean by Regression? State the properties of regression co-efficients.
17. For the following data, Calculate the co-efficient of Rank Correlation.
X : 80 91 99 71 61 81 70 59
Y : 123 135 154 110 105 134 121 106
18. 1800 candidates appeared for an examination, 450 were successful, 340 had attended a coaching class and out of these 200 came out successful. Estimate Co-efficient of Association.

PART –C

Answer any **TWO** Questions:

(2x20 =40 Marks)

19. Discuss in detail the scope and limitations of Statistics.

20. a) Compute Karl Pearson's co-efficient of Skewness for the following distribution.

Wages (in Rs.): 10 -20 20-40 40-70 70-90 90-100

No.of Workers: 5 15 30 8 2

b) Explain principle of least squares.

21. a) Define: (i) Correlation (ii) Positive Correlation (iii) Negative Correlation

b) State the properties of co-efficient of correlation

c) Given that

$$\text{Variance of } x = 9$$

Regression equations

$$8X - 10Y + 66 = 0$$

$$40X - 18Y = 214$$

Find on the basis of the above information

- i) the mean values of X and Y
- ii) Coefficient of correlation between X and Y
- iii) Standard deviation of Y.

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