LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **STATISTICS**

FIRST SEMESTER – APRIL 2017

16UST1MC01 / ST 1502 / ST 1500 - STATISTICAL METHODS

Date: 26-04-2017 Dept. No. Max. : 100 Marks
09:00-12:00

PART A

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

1. Define Survey.
2. What are the various scales of measurement in data.
3. Mention three types of curves in measuring kurtosis.
4. The value of Mode and median for a moderately skewed distribution are 64.2 and 68.6 respectively. Find the value of Mean.
5. Write down the pre-requisites of an ideal measures of average.
6. Write down the purpose of curve fitting.
7. Coefficient of variation of two series are 75% and 90% and their standard deviations are 15 and 18 respectively. Find their means.
8. Two regression lines of a bivariate distribution are 8x-10y+66=0 and 40x-18y=214. Find the means of x and y.
9. What is 2x2 contingency table?
10. Define Ultimate class frequency.

PART – B

Answer any FIVE questions **(5 x 8 = 40 marks)**

11. What are the scope and limitations of Statistics?
12. Calculate the first four moments and find β_1 and β_2 for the following data

X	0	1	2	3	4	5	6	7	8
f	5	105	15	20	25	20	15	10	5

13. Distinguish between Absolute and Relative measures of Variation.
14. State the principle of least squares and explain the method of fitting of second degree parabola.

15.From the following bivariate data

X	2	4	5	6	8	11
Y	18	12	10	8	7	5

(a) Fit a regression line of Y on X and find Y When X = 10

(b) Fit a regression line of X on Y and find X when Y = 8.5

(c) Show that the correlation coefficient is the geometric mean of regression coefficients.

16.Establish the relationship between Yule's coefficient of association and coefficient of colligation.

17. Distinguish beween correlation and regression.

18.In a very tough battle,

(i) 70% at least of combatants lost an eye

(ii) 75% at least an ear

(iii) 80% at least a leg

(iv) 85% at least an arm. What percentage at least lost all the four organs?

PART C

Answer any TWO questions **(2 x 20 = 40 marks)**

19.Explain the various diagrams and graphs used for representation of statistical data.

20.Calculate the trend values by the method of least squares from the following data. Also estimate the sales value in the year 2012.

Year	1997	1998	1999	2000	2001	2002	2003
Sales (rs.)	125	128	133	135	140	141	143

21.Calculate Karl Pearson's Coefficient ofskewness from the following data.

Wages	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
No. of laboureres	8	16	30	45	62	32	15	6

22. (a). Explain Scatter Diagram.

(b). Compute the Spearman's Rank correlation Coefficient from the following data.

X	35	23	47	17	10	43	9	6	28
Y	30	33	45	23	8	49	12	4	31

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