LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – **NOVEMBER 2017**

17/16UST1MC01 / ST 1502 – STATISTICAL METHODS

Date: 06-11-2017   Dept. No.   Max. : 100 Marks
Time: 01:00-04:00

SECTION – A   (10 x 2 = 20 Marks)
Answer ALL the questions

1. Define Statistics.

2. What are the types of data?

3. What are the measures of central tendency?

4. Write the formula for quartile deviation and its coefficient.

5. Write the formula for fitting a straight line.

6. What are the principles of least squares?

7. Define correlation.

8. What are the methods of studying correlation?

9. Define association of attributes.

10. Write the conditions for consistency of data for two attributes.

SECTION – B   (5 x 8 = 40 Marks)
Answer any FIVE questions:

11. Explain the difference between primary and secondary data.

12. Calculate the harmonic mean for the following data.

X	10	12	14	16	18	20
f	5	18	20	10	6	1

13. Fit a straight line trend to the following data by the method of least squares:

Year	1979	1980	1981	1982	1983	1984	1985
Output (Rs in Crores)	672	824	968	1205	1464	1758	2058

14. Calculate the rank correlation between the ranks given for X and Y series

X	10	8	1	2	6	9	3	5	4	7
Y	6	10	5	4	3	1	2	9	8	7

15. Investigate the association between darkness of eye-colour in father and son from the following data

Fathers with dark eyes and sons with dark eyes :   50

Fathers with dark eyes and sons with not dark eyes : 79

Fathers with not dark eyes and sons with dark eyes : 89

Fathers with not dark eyes and sons with not dark eyes : 782

Also tabulate for comparison the frequencies that would have been observed had there been no heredity.

16. Write down the objectives of tabulation.

17. Calculate the mode of the following distribution.

X	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
f	3	6	10	20	15	5	4	2

18. Calculate the karl pearson's coefficient of correlation from the following data.

X	10	12	18	24	23	27
Y	13	18	12	25	30	10

SECTION – C   (2 x 20 = 40 Marks)
Answer any TWO questions.

19. a. Explain the scope of statistics.

    b. Explain the components of a good table.

20. Calculate the karl pearson's coefficient of skewness from the following data.

C-Interval	0-20	20-40	40-60	60-80	80-100
F		13	25	27	19	16

21. Calculate the regression equation of X on Y and Y on X from the following data and estimate X when Y=26.

X	10	12	13	17	18	20	24	30
Y	5	6	7	9	13	15	20	21

22. Find if A and B are independent, positively associated or negatively associated, in each of the following cases:

(i) N=1000, (A) = 470, (B) = 620, and (AB) = 320.

(ii) (A) = 490, (AB) = 294, ( ) = 570, and ( ) = 380.

(iii) (AB) = 256, (B) = 768, (A) = 48, and ( ) =144.

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