LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – **NOVEMBER 2016**

16UST1MC01/ST 1502/ST 1500 – STATISTICAL METHODS

Date: 05-11-2016   Dept. No.   Max. : 100 Marks
Time: 01:00-04:00

SECTION – A (10 x 2 = 20 Marks)

Answer ALL the questions

1. What does census method imply?
2. Distinguish between Primary data and Secondary data.
3. State any four limitations of diagrammatic representation.
4. Mention the desirable properties of a good measure of central tendency.
5. An analysis of monthly wages paid to the workers of two firms A and B belonging to the same industry gives the following results.

	Firm A	Firm B
Number of workers	500	600
Average daily wage	Rs.186	Rs.175
Variance of distribution of wages	81	100

   In which firm A or B is there greater variability in individual wages?

6. A frequency distribution gave the following results:-
   C.V = 5, Karl Pearson's coefficient of Skewness = 0.5 and $\sigma = 2$
   Find the mean and mode of the distribution.
7. What do you mean by Linear Regression?
8. Given the two regression equations $8X – 10Y + 66 = 0$ and $40X – 18Y = 214$
   Find the mean values of X and Y.

9. Find the missing frequencies from the following data:

   $(A) = 400$; $(AB) = 250$; $(B) = 500$; $N = 1200$.

10. When do you say that the attributes are independent?

SECTION –B (5 X 8 = 40 Marks)

Answer any FIVE questions:-

11 Explain the method of collection of Primary data.
12. Write down the objectives of Tabulation.
13. A company has three establishments A, B and C in three cities. Analysis of the monthly salaries paid to the employees in three establishments is given below:

	A	B	C
Number of employees	25	20	40
Average monthly salary (Rs)	300	305	340
Standard deviation of monthly salary (Rs)	40	50	45

   Find the average and standard deviation of the monthly salaries of all the 85 employees.

14. When do you say the distribution is Skewed? Write down the objective of studying Skewness.

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15. Explain the concept of Principle of Least Squares.

16. The annual production of a commodity is given as follows:

   Year   : 1990   1991 1992 1993   1994 1995 1996

   Production :   70   80   90   95   102   110   115

  Fit a Straight line by the method of least squares.

17. Calculate the Correlation Coefficient from the following data.

   X 12   9   8   10   11   13   7

   Y 14   8   6   9   11   12   3

18. From the following data find out whether the data is consistent or not

   (i) (AB) = 50 ; (αB) = 25 ; (α) = 100 and N = 200

   (ii) (AB) = 200 ; N = 1000 ; (A) = 150   ; (B) = 300

                        SECTION – C (2 x 20 = 40 Marks)

  Answer any TWO Questions

19 a) Briefly write the essential parts of a Statistical table.

  b) Calculate mean, median and mode for the following frequency distribution

      C I : 0 - 8   8 - 16   16 – 24   24 - 32   32- 40 40- 48

       f : 8   7   16   24   15   7

20. a) Why standard deviation is said to be a good measure of dispersion?

  b) Find Quartile co-efficient of Skewness from the following frequency distribution.

     Income :   : 30 – 40 40- 50 50- 60 60 – 70 70 – 80 80 – 90 90 – 100

     Number of Persons   8   24   48   68   30   13   9

21. a) Write down the relation between Regression analysis and Correlation analysis.

  b) What are Regression Co-efficients?   Write down the properties of Regression co-efficients.

22. Using the following data obtain the two regression equations

        X 16 21 26 23 28 24 17 22 21

        Y 33 38 50 39 52 47 35 43 41

Find the value of Y when X = 18 and find the value of X when Y = 45.

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