



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

## B.Com. DEGREE EXAMINATION – CORPORATE SECRETARYSHIP

FIRST SEMESTER – NOVEMBER 2015

### CO 1104 - FUNDAMENTALS OF STATISTICS

Date : 11/11/2015  
Time : 01:00-04:00

Dept. No.

Max. : 100 Marks

#### SECTION - A

Answer ALL questions.

(10 x 2 = 20 marks)

1. What is the scope of statistics?
2. List the types of classification.
3. What do you mean by histogram?
4. Find range and coefficient of range for the following data: 100, 89, 90, 60, 86, 88
5. Define mean deviation.
6. In a distribution, the difference between two quartiles is 15 and their sum is 35 and the median is 20. Find the coefficient of skewness.
7. State any four properties of correlation coefficient.
8. What are the merits of regression equations?
9. What is secular trend?
10. Identify the method of least squares for the measurement of trend.

#### SECTION - B

Answer any FOUR questions

(4 X 10 = 40 Marks)

11. Distinguish between:
  - (i) Deliberate and random sampling
  - (ii) Stratified and systematic sampling.
12. Explain the various types of diagrammatic representation.
13. Represent the following data by a suitable Diagram:

*Distribution of Monthly income of 2 families A and B*

Item of expenditure	Family A	Family B
Rent	5000	5500
Food	3000	2500
Clothing	1500	2000
Education	2000	1500
Savings	2000	2000
Miscellaneous	2500	3000

14. Find the median from the data given below:

Marks	0 – 5	5 – 10	10 – 15	15 – 20	20 – 30	30 – 40	40 – 50
No. of students	5	7	9	5	16	14	13

15. An analysis of the monthly wages paid to workers in two firms A and B belonging to the same industry, gives the following result:

	Firm A	Firm B
Number of wage earners	550	650
Average monthly wages	Rs. 1450	Rs. 1400
Variance of the distribution of	Rs. 10000	Rs. 19600

- (a) In which firm, *A* or *B* is there greater variability.  
 (b) Find the average monthly wages and standard deviation of individual wages of all workers in the two firms taken together?

16. Calculate coefficient of rank correlation from the following data:

Marks in Science	40	46	54	60	70	80	82	85	85	90	95
Marks in Maths	45	45	50	43	40	75	55	72	65	42	70

17. The production of Tea in India is given as follows. Calculate the Four-yearly moving averages and also calculate the short-term fluctuations.

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Production (in tonnes)	464	515	518	467	502	540	557	571	586	612

**SECTION- C**

Answer any TWO questions

(2 X 20 = 40 Marks)

18. (a) The mean mark in Statistics for 100 students of a class was 72. The mean mark of 70 boys was 75. Find out the mean mark of girls in the class.  
 (b) Calculate the mean, median and mode from the following data and verify the empirical relationship.

Class	10 – 15	15– 20	20– 25	25– 30	30 -35	35- 40	40 - 45
Frequency	8	14	18	25	15	14	6

(5+15)

19.(a)The Karl Pearson’s coefficient of Skewness of a distribution is 0.32. Its S.D. is 6.5 and the mean is29.6. Find the Mode and Median

(b) Calculate Bowley’s coefficient of Skewness from the following data:

Daily income(Rs.)	Below 200	200 – 400	400 – 600	600 – 800	800 – 1000	1000 and above
No. of persons	25	40	85	75	20	16

(5 +15)

20. You are given below the following information about advertising and sales

	Advertising Expenses ( <i>X</i> ) Rs. Lakhs	Sales ( <i>Y</i> ) Rs. Lakhs
Mean	10	90
S.D.	3	12
Correlation coefficient	0.8	

- (i) Obtain the two regression lines.  
 (ii) Find the likely sales when advertisement expenditure is Rs. 15 lakhs?  
 (iii) What should be advertisement expenditure if the Company wants to attain sales target of Rs. 120 lakhs?

(20)

21. Calculate Seasonal Indices using the method of Link Relatives:

Year \ Quarter	2006	2007	2008	2009
I	55	60	65	70
II	75	80	85	35
III	56	78	89	90
IV	10	20	40	50

(20)

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