



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Com. DEGREE EXAMINATION – CORPORATE SECRETARYSHIP

FIRST SEMESTER – NOVEMBER 2016

16UST1AL02 - FUNDAMENTALS OF STATISTICS

Date: 09-11-2016
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

SECTION - A

Answer ALL questions.

(10 x 2 = 20 marks)

1. What are the general rules to be followed in tabulation?
2. What are the objectives of classification?
3. Distinguish between bar diagram and histogram.
4. Explain the merits of geometric mean.
5. What do you mean by relative measures of dispersion?
6. What do you understand by mean deviation?
7. Find range for the following data: 65, 70, 78, 65, 68,60
8. Explain scatter diagram method.
9. What are the components of time series?
10. State the advantages of Index numbers.

SECTION - B

Answer any FIVE questions

(5 X 8 = 40 Marks)

11. Describe non-probability sampling techniques.
12. Draw a Histogram and Frequency Polygon on the basis of the following data:

Marks	1-10	11-20	21-30	31- 40	41-50	51-60	61-70	71-80
No. of students	6	7	12	14	15	9	6	4

13. Calculate Harmonic Mean for the following data:

x	10	12	14	16	18	20
f	5	8	12	10	6	13

14. Calculate the Mean Deviation about the mean and about the median for the following data:15, 25, 32, 46, 80, 95, 98

15. Calculate the regression equations of x on y and y on x for the following data:

x	10	12	13	17	18
y	5	6	7	9	13

16. . Find the Rank Correlation coefficient from the following data:

Sl. No.	1	2	3	4	5	6	7	8	9	10
Ranks in Statistics	9	7	5	6	1	4	3	2	5	10
Ranks in Maths	8	6	7	5	4	3	2	1	10	9

17. Calculate the three yearly moving average of the following data and also calculate Short-Term Fluctuations.

Year	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Production (in tonnes)	50	36	43	45	39	38	33	42	41	34

18. Describe the uses and limitations of index number.

SECTION- C

Answer any TWO questions

(2 X 20 = 40 Marks)

19.(a) Calculate Mean, Median and Mode and verify empirical relation:

Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 - 50	50 – 60	60 – 70	70 – 80
Frequency	9	6	12	15	13	9	6	4

(b) There are 50 students in a class. The average marks of the 10 failed students is 25. The total marks got by the entire class is 2,810. What is the average mark of the successful candidates?

(15 + 5)

20. Calculate Karl Pearson's Coefficient of Skewness:

Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
Frequency	6	12	22	48	56	32	18	6

(20)

21(a). Calculate Karl Pearson's coefficient of correlation for the following data:

Price (Rs.)	15	16	20	22	25	24	23	20	23
Demand	87	90	95	98	100	99	95	96	97

(b) Given the following data:

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

Regression Equations:

$$4X - 5Y + 33 = 0$$

$$20X - 9Y - 107 = 0$$

(a) Find the mean values of X and Y.

(b) Find S.D. of Y.

(c) Find the coefficient of correlation between X and Y.

(10+10)

22. Calculate Laspeyre's Index number, Paasche's price index number and Marshall-Edgeworth Index and verify whether they satisfy Time reversal test and Factor reversal test.

Commodity	2005		2006	
	Price (in Rs.)	Quantity (in kgs.)	Price (in Rs.)	Quantity (in kgs.)
A	10	80	20	100
B	11	140	24	130
C	14	90	25	120
D	12	60	15	70
E	15	70	22	100

(20)
