LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.B.A., B.COM DEGREE EXAMINATION – **BUSI. ADMIN. & COR. SEC.**

SECOND SEMESTER – NOVEMBER 2016

ST 2105 - FUNDAMENTALS OF STATISTICS

Date: 15-11-2016
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

SECTION -A

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

1. Describe the origin and development of Statistics

2. State the different types of diagrams.

3. What are the various methods of measuring central tendency?

4. Find the arithmetic mean for the following data: 12, 15, 18, 20, 25, 30, 22, 35, 37, 26

5. Define Range & its coefficient.

6. Define standard deviation.

7. In a moderately asymmetrical distribution, the mode and mean are 32.1 and 35.4 respectively. Calculate the median.

8. State any two properties of correlation coefficients.

9. What are the regression lines?.

10. Write short note on moving average method.

SECTION B

Answer any FIVE questions   **(5 X 8 = 40 Marks)**

11. Explain the various functions of Statistics.

12. Describe the non-probability Sampling Techniques with examples.

13. Represent the following data by a Sub-Divided Bar Diagram about the Distribution of daily expenditures of 2 families A and B

Income	Family A	Family B
Rent	4500	5000
Food	4000	4500
Clothing	2000	2500
Education	1500	2000
Savings	1500	1000
Miscellaneous	2000	2000

14. From the following details, calculate standard deviation:

Marks	10	20	30	40	50	60
No. of students	8	12	20	10	7	3

15. Find the standard deviation and coefficient of variation for the given data:

Age(Years)	25-30	30-35	35-40	40-45	45-50	50-55
No. of workers	70	51	47	31	29	22

16. Find the quartile deviation and coefficient of quartile deviation for the following data:

Marks	0-10	10 - 20	20-30	30-40	40-50	50-60	60 -70
Frequency	8	20	34	46	28	14	10

17. Calculate Correlation Coefficient between height (in inches) and weight (in kg) from the data given below:

Height	60	63	65	54	68
Weight	50	53	60	67	70

18. Fit a straight line trend for the following data through the method of least squares and estimate the trend values. Also estimate the trend value for the year 2010.

Year	2001	2002	2003	2004	2005	2006	2007
Sales	116	120	125	127	130	140	145

SECTION C

Answer any TWO questions (2 X 20 = 40 Marks)

19.(a) From the following data find mean, median and mode. Verify the empirical relation.

Marks	0-20	20 - 40	40-60	60-80	80-100
Frequency	3	17	27	20	9

(b) A factory employs 100 workers of whom 60 work in the First Shift and 40 work in the Second Shift. The average wage of all the 100 workers is Rs. 120. If the average wage of 60 workers of the First Shift is Rs. 150. Find the average wage of the remaining 40 workers of the Second Shift
.

(15 +5)

20. Calculate Karl Pearson's coefficient of Skewness from the following data:

Annual Income (Rs. in lakhs)	70 – 80	80 – 90	90 – 100	100 -110
No. of persons	12	18	35	42

(20)

21.(a) Calculate Spearman's Rank Correlation for the following data:

Ranks of X	1	8	3	8	10	5	4	7	7	3
Ranks of Y	6	5	9	3	6	3	4	1	9	10

(b) 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

(10 + 10)

22. From the following data, calculate Seasonal Indices by the method of ratio-to-trend.

Year / Quarter	1979	1980	1981	1982
I	45	50	75	26
II	35	20	70	25
III	79	50	49	60
IV	63	89	66	78

(20)

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