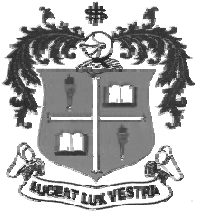# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **CORP. SECR. & BUSIN. ADMIN.**

THIRD SEMESTER – **NOVEMBER 2013**

ST 3105 - INTRODUCTION TO STATISTICS

Date : 16/11/2013   Dept. No.   Max. : 100 Marks
Time : 9:00 - 12:00

SECTION - A

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

1. Discuss the characteristics of statistics.

2. Explain the various ways of collecting secondary data.

3. Explain stratified random sampling.

4. What is classification?

5. Explain any two types of diagram to represent the data.

6. Calculate Median for the following data:

    27 26 22 20 25 22 23

7. Define Mean deviation.

8. Define Correlation. Discuss its uses.

9. What are the components of time series?

10. Define the positive attributes.

SECTION - B   **(5 X 8 = 40 Marks)**

Answer any FIVE questions

11.(a) Explain various types of diagrammatic representation.

  (b) Explain systematic sampling.

12. Draw a histogram and frequency polygon on the basis of the following data:

Weight(in kg)	41-45	46-50	51-55	56-60	60-65	66-70	71-75	76-80
No. of men	4	5	9	6	11	5	7	3

13. Calculate median for the following data:

Savings	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No of students	15	12	17	13	14	10	9	6	5	7

14. Compute mean deviation about mean from the following frequency distribution.

x	0-10	10-20	20-30	30-40	40-50	50-60	60-70
f	8	12	10	8	3	2	7

15. Find the standard deviation for the given data:

C.I	10-15	15-20	20- 25	25-30	30-35	35-40
f	2	8	20	35	20	15

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

Marks in Accountancy	78	39	36	65	62	90	82	75	25	98
Marks in statistics	84	47	51	53	58	86	62	68	60	91

17. Using three yearly moving averages determine the trend and short term fluctuations:

Year	1973	1974	1975	1976	1977	1978	1979
Production	50	46	42	49	52	40	54

18. 200 Candidates appeared for a competitive examination and 60 of them succeeded.35 received special coaching and out of them 20 candidates succeeded. Prepare a 2 x 2 contingency table and using Yule's coefficient, discuss whether special coaching is effective or not.

SECTION - C   (2 X 20 = 40 Marks)

 Answer any TWO questions

19.(a) Calculate the Arithmetic mean, Median of the following data .Hence calculate the mode using empirical formula:

C.I	130-134	135-139	140-144	145-149	150-154	155-159	160-164
Frequency	5	15	28	24	17	10	1

(10)

19.(b) Calculate Bowley's coefficient of skewness from the following data:

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
No. of persons	12	20	25	24	12	35	30	20

(10)

20. Calculate Skewness and kurtosis for the following distribution and interpret them.

C.I	1-5	6-10	11-15	16-20	21-25	26-30	31- 35
Frequency	3	4	68	30	10	6	2

(20)

21 (a) You are given below the following information about advertising and sales

	X Rs.	Y Rs.
Arithmetic average	6	8
Standard deviation	5	40/3

Coefficient of Correlation between X and Y= 8/15

   Find (i) the regression coefficient of X on Y
         (ii) the regression equation of Y on X
         (iii) the most likely value of Y when X=100 rupees

(10)

21(b) Calculate the Karl Pearson's correlation coefficient between X and Y from the following data:

X	10	12	13	16	17	20	25
Y	19	22	26	27	29	33	37

(10)

22. Calculate the seasonal indices by the ratio to moving average method.

Wheat Prices (in rupees quintal)

Quarter/Year	1972	1973	1974	1975
Quarter I	75	86	90	100
Quarter II	60	65	72	78
Quarter III	54	63	66	72
Quarter IV	59	80	85	93

(20)

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