LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.B.A. DEGREE EXAMINATION – **BUSINESS ADMINISTRATION**

FIRST SEMESTER – **APRIL 2016**

BC 1100 - ELEMENTS OF STATISTICS

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

SECTION - A

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

1. State any two applications of statistics.
2. Identify the different types of diagrammatic representation.
3. What is random sampling?
4. State any two limitations of median.
5. Define the terms mean deviation.
6. State the Bowey's coefficient of skewness.
7. What are the various methods of studying correlation?
8. What are the uses of regression analysis?
9. State the demerits of moving average method of trend.
10. What are the uses of time series analysis?

SECTION - B **(4 X 10 = 40 Marks)**

Answer any FOUR questions

11. (a) Differentiate between classification and tabulations.

    (b) Describe the primary and secondary methods of data collection.

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

Mid-value	115	125	135	145	155	165	175	185	195
Frequency	6	25	48	72	116	60	38	22	3

13. Calculate the value of median for the following data:

Marks	21 – 30	31 – 40	41 – 50	51 – 60	61 – 70	71 - 80	81- 90
No.of students	15	13	27	10	14	9	12

14. The mean of two samples of sizes 90 and 40 were respectively 59 and 54.The corresponding standard deviations were respectively 9 and 6. Obtain the mean and variance of combined samples.

15.Calculate the mean deviation about the median for the following data.

Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 - 70	70 - 80
Frequency	18	16	15	12	10	5	2	2

16. Calculate Pearson's coefficient of correlation for the following data.Also find probable error

Demand (kg.)	85	93	95	105	120	130	150	160
Price (Rs.)	15	18	20	24	30	35	40	59

17. (a)Differentiate between correlation and regression analysis.

    (b) Describe the different methods of measuring Seasonal Variation

SECTION- C **(2 X 20 = 40 Marks)**

Answer any TWO questions

18.(a)The daily mean salary paid to 1,000 employees of an establishment was found to be Rs.180.40.Later on, after disbursement of salaries it was discovered that the salary of two employees was wrongly entered as Rs. 297 and Rs. 165, their correct salaries were Rs. 197 and Rs. 185. Find the correct arithmetic mean salary.

(b) Find the Quartile Deviation for the following distribution

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

(5 +15)

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

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Frequency	10	20	30	50	40	30

(b) In a frequency distribution, the coefficient of skewness based on quartiles is 0.6. If the sum of the upper and lower quartiles is 100 and the median is 38. Find the value of the upper quartile. **(15+5)**

20. Find the two regression equations from the following data Estimate the value of y when the value of x is 65.also find the correlation coefficients using two regression coefficients b_{xy} and b_{yx}

X	57	58	59	60	61	62	64
Y	77	78	75	82	82	79	81

(20)

21.(a)Fit a straight line to the following data by the least squares method after summing the given quarterly data due to yearly data:

Quarter / *Year*	*I*	*II*	*III*	*IV*
2002	10	13	14	12
2003	12	14	15	13
2004	13	15	18	14
2005	15	19	21	18
2006	15	22	23	20
2007	20	21	25	20

(b) Calculate five year moving average for the following data:

Year	2001	2002	2003	2004	2006	2007	2010	2011	2012	2013
Value	123	1140	110	98	104	133	95	105	150	135

(10 + 10)

****