



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.B.A. DEGREE EXAMINATION – BUSINESS ADMINISTRATION

SECOND SEMESTER – APRIL 2017

ST 2105- FUNDAMENTALS OF STATISTICS

Date: 25-04-2017
01:00-04:00

Dept. No.

Max. : 100 Marks

SECTION -A

Answer ALL the questions.

(10 x 2 = 20 Marks)

1. Define classification.
2. Explain two-dimensional diagrams to represent data.
3. Calculate median for the following data: 40, 48, 50, 68, 46, 45, 56, 40, 60.
4. The mean of 200 items was 50. Later on it was discovered that two items were misread as 92 and 8 instead of 192 and 88. Find out the correct mean.
5. Define mean deviation.
6. What do you mean by relative measures of dispersion?
7. Explain scatter diagram method.
8. Define the term positive correlation.
9. Define Time Series.
10. Discuss the method of least square for the measurement of trend.

SECTION B

(5 X 8 = 40 Marks)

Answer any FIVE questions

11. What are the types of classifications? Explain.
12. (a) Differentiate between classification and tabulation.
(b) Distinguish between primary data and secondary data.
13. Draw a histogram and frequency polygon on the basis of the following data:

Marks	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
No. of students	6	8	10	14	10	9	7	5

14. Differentiate between Mean Deviation and Standard Deviation.

15. Find the mean deviation about the mean for the following data:

Value (x)	10	11	12	13	14
Frequency (y)	3	12	18	12	3

16. Calculate Karl Pearson's coefficient of correlation from the following data:

Demand (kg)	95	96	98	110	115	125	130	140
Price (Rs.)	25	26	23	27	30	33	35	40

17. What is ratio-to-trend method? State its merits and limitations

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

Year	1982	1983	1984	1985	1986	1987	1988
Sales	110	115	130	140	145	160	180

SECTION C

(2 X 20 = 40 Marks)

Answer any TWO questions

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

CI	3-4	4-5	5-6	6-7	7-8	8-9	9-10
Frequency	12	15	20	24	18	17	14

(b) The Mean marks of 100 students were found to be 60. Later on it was discovered that a score of 63 was misread as 93. Find the correct mean.

(15+5)

20. a) Find the Quartile Deviation and its coefficient for the following distribution

<i>Class Interval</i>	0 – 10	10 – 20	20 – 30	30 - 40	40 – 50	50 – 60
<i>Frequency</i>	10	12	15	13	14	9

b) 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

(10+10)

21. The following table gives the aptitude test scores and productivity indices of 10 workers selected at random.

Aptitude scores(x)	75	83	85	86	87	88	76	74	79	88
Productivity index(y)	78	85	65	80	83	85	65	66	65	80

Find the two regression equations and estimate:

- (i) the productivity index of a worker whose test score is 90
- (ii) the test score of a worker whose productivity index is 75.

(20)

22.a) Calculate the trend values by the method of moving averages, assuming a four-yearly cycle, from the following data relating to sugar production in India.

<i>Year</i>	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<i>Production</i>	45	48	46	47	50	48	49	46	52	54	46

b) Calculate the seasonal indices from the following data using the simple average method.

Year	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
1974	72	68	80	70
1975	76	70	82	74
1976	74	66	84	80
1977	76	74	84	78
1978	78	74	86	82

(10+10)

