

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.B.A. B.COM., DEGREE EXAMINATION – BUSINESS ADMIN. & CORPORATE SEC.

THIRD SEMESTER – APRIL 2013

ST 3105 - INTRODUCTION TO STATISTICS

Date : 04/05/2013
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

SECTION - A

Answer ALL questions.

(10 x 2 = 20 marks)

1. Define statistics and give some applications of statistics.
2. Mention the uses of diagrammatic representation of data.
3. State the various methods of collecting secondary data.
4. State and explain any two methods of non-probability sampling.
5. Find the harmonic mean of the following data:
25,24, 26,27, 29,23
6. Calculate the standard deviation for the following data.
9,27,18,54,45,72,36,63,81
7. In a frequency distribution, the coefficient of skewness based on quartiles is 0.5. If the sum of the upper and lower quartiles is 28 and the median 11. Find the values of lower and upper quartiles.
8. What is meant by skewness? How is it measured?
9. Define correlation. Give an example.
10. What is time series? What are its components?

SECTION - B

(5 X 8 = 40 Marks)

Answer any FIVE questions

- 11.(a) Distinguish between classification and tabulation.
(b) Distinguish between primary data and secondary data
12. Represent the following data by a suitable diagram.

Year	Rice	Wheat	Maize
2001	87	65	72
2002	90	71	75
2003	95	80	79

13. The mean wage of 80 female workers in a factory is Rs.3000 and the mean wage of 120 male workers in the same factory is Rs.3500. Find the combined mean wage of 200 workers in the factory.

14. The first four moments of a distribution about the value 5 are 2, 20, 40 and 50. Obtain the mean, variance, β_1 and β_2 .

15. 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
Frequency	8	20	25	30	12	5

16. Ten competitors in a beauty contest are ranked by 3 judges in the following order:

1 st judge	2	7	1	5	3	4	8	6	10	9
2 nd judge	10	6	3	8	7	2	9	5	4	1
3 rd judge	2	5	6	9	1	3	7	4	8	10

Which pair of judges agree on their judgment?

17. Fit a straight line trend equation by the method of least square and estimate the trend values from the following data:

Year	2001	2002	2003	2004	2005	2006
Value	21	20	22	25	23	24

18. 800 candidates of both sex appeared at an examination. The boys out numbered the girls by 15 % of the total. The number of candidates who passed exceed the number failed by 480. Equal number of boys and girls failed in the examination. Prepare a 2x2 table, find the coefficient of association and comment.

SECTION - C

(2 X 20 = 40 Marks)

Answer any TWO questions

19.(a) Calculate the mean, median and mode from the following data and verify empirical formula:

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No of students	6	12	10	40	42	25	15	9

(10)

19.(b) Find the mean deviation about the mean for the following data:

Value (x)	2	3	4	5	6	7
Frequency(y)	1	5	8	4	2	1

(10)

20.(a) Find the standard deviation and coefficient of variation for the given data:

C.I	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
F	2	5	7	15	21	16	8	3

(10)

20.(b) Calculate the four moments about mean for the following data.

x	2	3	4	5	6
f	1	3	7	3	1

(10)

21 (a) The following table shows the ages(x)and weight(y) of 10 persons.

X	23	33	36	20	27	25	37	35
Y	60	63	68	55	57	58	70	65

Obtain the regression equation of Y on X and find the expected weight of a person who is 45 years old.
(10)

21(b) Find the correlation coefficient between production and sales of a factory from the data given below:

Production (in tones)	50	55	63	67	65	60	61
Sales (in thousands)	35	36	42	51	54	53	55

(10)

22. Using 4 quarterly moving averages in respect of the following data, find (i) trend
(ii) the short- term fluctuations (iii) seasonal fluctuation

Wheat Prices (in rupees quintal)

Year	Quarter I	Quarter II	Quarter III	Quarter IV
1980	25	30	33	35
1981	40	42	45	46
1982	35	36	37	38
1983	30	35	34	36

(20)
