

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



U.G. DEGREE EXAMINATION – ALLIED

FIRST SEMESTER – APRIL 2022

16/17/18UST1AL01 – INTRODUCTION TO STATISTICS

Date: 27-06-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

SECTION – A

Answer ALL the questions

(10 X 2 = 20)

1. Distinguish between primary and secondary data.
2. Define Statistics.
3. What is meant by histogram?
4. State the rules for diagrammatic presentation.
5. Find the mode for the following data: 6, 8, 11, 8, 7, 8, 12, 6.
6. Define harmonic mean.
7. Calculate standard deviation from the following observations of marks of 5 students of a tutorial group:

Marks out of 25				
8	12	13	15	22

8. Write any two properties of correlation coefficients.
9. Distinguish between correlation and regression.
10. What is meant by time series analysis?

SECTION – B

Answer any FIVE questions

(5 X 8 = 40)

11. During 2005-06 to 2007-08 the number of students in University 'X' was as follows. Represent the data by a suitable diagram.

Year	Arts	Science	Law
2005-06	20000	10000	5000
2006-07	26000	9000	7000
2007-08	31000	9500	7500

12. What do you mean by a questionnaire? Discuss the points to be observed in designing a good questionnaire.
13. Compute the geometric mean and harmonic mean for the data given below:

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	8	12	18	8	6

14. Coefficient of variation of two series is 60% and 80%. Their standard deviations are 24 and 20. What are their arithmetic means?
15. Calculate the coefficient of correlation between X and Y for the data given below:

X	15	18	30	27	25	23	30
Y	7	10	17	16	12	13	9

16. Find the means of X and Y variables and the coefficient of correlation between from the following regression equations: $2Y - X - 50 = 0$ and $3Y - 2X - 10 = 0$.

17. Explain briefly the components of time series analysis.

18. Fit a straight line trend to the following data by least square method:

Year	2002	2003	2004	2005	2006	2007	2008
Sales(m. tones)	20	24	22	30	28	32	30

Estimates the likely sales for the year 2013.

SECTION – C

Answer any TWO questions

(2 X 20 = 40)

19. (i) Find the mean, median and mode from the following data: (10)

Class	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Frequency	8	14	18	25	15	14	6

(ii) Construct a histogram for the following frequency distribution: (10)

Variable	35-40	40-45	45-50	50-55	55-60
Frequency	12	30	22	30	28

20. (i) From the marks given below obtained by two students taking the same course, find out who is the more consistent student. (12)

A	58	59	60	65	66	52	75	31	46	48
B	56	87	89	46	93	65	44	54	78	68

(ii) What are the properties of a good measure of variation? (8)

21. (i) Find the regression coefficient of X on Y and Y on X for the following data: (10)

X	3	2	-1	6	4	-2	5
Y	5	13	12	-1	2	20	0

(ii) Two judges in a beauty competition rank the 12 entries as follows:

X	1	2	3	4	5	6	7	8	9	10	11	12
Y	12	9	6	10	3	5	4	7	8	2	11	1

What degree of agreement is there between the judgment of the two judges? (10)

22. Calculate seasonal indices by the ratio to moving average method, from the following data:

Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
2006	68	62	61	63
2007	65	58	66	61
2008	68	63	63	67

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