

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



U.G. DEGREE EXAMINATION – ALLIED

FIRST SEMESTER – APRIL 2023

16/17/18UST1AL02 – FUNDAMENTALS OF STATISTICS

Date: 12-05-2023

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

SECTION – A

Answer ALL the questions

(10 x 2 = 20)

1. Distinguish between classification and tabulation.
2. Define quota sampling.
3. What is meant by histogram?
4. Write any two uses of statistics.
5. Find the arithmetic mean for the following data: 16, 18, 11, 28, 7, 12, 6.
6. Define standard deviation.
7. State any two merits and demerits of mean deviation.
8. Write any two properties of correlation coefficients.
9. What is positive correlation?
10. Define index numbers.

SECTION – B

Answer any FIVE questions

(5 x 8 = 40)

11. Represent the following data by a suitable diagram:

College	Arts	Science	Law	Commerce
A	1200	800	600	400
B	750	500	300	450

12. Explain the different methods of sampling.

13. Compute the mean deviation about median for the data given below:

8	15	33	49	19	62	7	15	95	77
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14. The mean and variance of 100 items are found by a student as 50 and 0.1 respectively. If at the time of calculation two items are wrongly taken as 40 and 50 instead of 60 and 30, then find the correct mean and standard deviation.

15. Calculate the coefficient of correlation between X and Y for the data given below:

X	53	98	95	81	75	61	59	55
Y	47	25	32	37	30	40	39	45

16. Distinguish between correlation and regression.

17. Explain briefly the classification of index numbers.

18. From the following data construct an index for 2014 taking 2013 as base:

Commodities	A	B	C	D	E
Price in 2013 (Rs.)	50	40	80	110	20
Price in 2014 (Rs.)	70	60	90	120	20

SECTION – C

Answer any TWO questions

(2 x 20 = 40)

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

Marks	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	6	8	15	2	5	2

(10)

- (ii) Construct a histogram for the following data:

Marks	0-10	10-20	20-40	40-50	50-60	60-70	70-90	90-100
No. of Students	4	6	14	16	14	8	16	5

(10)

20. (i) Calculate Bowley's coefficient of skewness for the following data: (12)

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	5	8	7	12	28	20	10	10

(ii) State the characteristics of a good measure of dispersion. (8)

21. (i) Given the following data: Variance of $X = 9$. The regression equations are $4X - 5Y + 33 = 0$ and $20X - 9Y - 107 = 0$. Find (a) The mean values of X and Y and

(b) The standard deviation of Y . (10)

(ii) Calculate rank correlation coefficient from the following data: (10)

X	12	9	8	10	11	13	7
Y	14	8	6	9	11	12	3

22. Calculate the price index number to the following data by

(a). Laspeyres method (b). Paasche's method (c). Bowley's method

(d). Fisher's Ideal formula (d). Marshall-Edge worth's method.

Commodity	2012		2013	
	Price (Rs.)	Quantity (in kg)	Price (Rs.)	Quantity (in kg)
A	6	50	10	56
B	2	100	2	120
C	4	60	6	60
D	10	30	12	24
E	8	40	12	36

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