LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

U.G. DEGREE EXAMINATION – **ALLIED**

FIRST SEMESTER – **NOVEMBER 2019**

16/17/18UST1AL02 – FUNDAMENTALS OF STATISTICS

Date: 05-11-2019   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

SECTION – A

Answer ALL   **(10 x 2 = 20)**

1. Define Statistics

2. State any two misuses of Statistics.

3. What is the advantage of Sampling?

4. What is Co efficient of Range? Give example.

5. A group of 80 candidates have their average height is 145.8 cm with coefficient of variation 2.5%. What

   is the standard deviation of their height?

6. Write the relative measure of quartile deviation and mean deviation.

7. What is the difference between Correlation and Regression?

8. How will you identify the relationship between two variables using statistical techniques?

9. What are the various components of time series?

10. State any two formulae for calculating index numbers.

SECTION – B

Answer any FIVE from the following   **(5 x 8 = 40)**

11. Describe in detail the various methods of Sampling techniques.

12. Draw Frequency Polygon and Frequency Curve for the following data.

Age group	0 - 9	10 - 19	20 -29	30-39	40- 49	50 - 59	60 - 69	≥ 70
Population ('000)	676	885	994	1105	1208	677	503	499

13. Find the quartile deviation and co – efficient of quartile deviation for the following data.

Length (mm)	20 – 24	25 – 29	30 – 34	35 – 39	40 – 44	45 – 49	50 – 54
Frequency	6	10	18	25	22	15	4

14. Following are the marks obtained, out of 100, by two students Ravi and Hashina in 10 tests.

   Ravi   25   50   45   30   70   42   36   48   35   60

   Hashina   10   70   50   20   95   55   42   60   48   80

   Who is more intelligent and who is more consistent?

15. Explain in detail the various measures of dispersion.

16. Calculate the Rank correlation coefficient of the following data

X	26	31	33	27	21	25	26	24	29
Y	78	77	75	77	76	79	77	74	77

17. Explain in detail the uses of index numbers.

18. Calculate the trend for the following data using 4 period moving average.

	Q1	Q2	Q3	Q4
2002	318	380	358	423
2003	379	394	412	439
2004	413	458	492	493
2005	461	468	529	575
2006	441	548	561	620

SECTION – C

Answer any TWO from the following   **(2 x 20 = 40)**

19. (a) Find Mean, Median and Mode from the data given below.   (14 Marks)

    (b) Calculate Mean Deviation about the Mean for the following data.   (6 Marks)

Marks	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
No of students	6	29	87	181	247	263	133	43	9	2

20. (a) Calculate Karl Pearson's coefficient of Skewness.   (14 Marks)

X	0-10	10-20	20-30	30-40	40-50
f	15	17	25	18	16

    (b) Calculate the correlation coefficient for the following data.   (6 Marks)

X	1	1	3	4	6	7	8	8
Y	1	3	2	5	4	5	7	8

21. (a) Fit the regression equation of the following data. (10Marks)

X	11	14	17	10	12
Y	25	28	32	19	20

(b) Given the following data: Variance of X = 9 and the Regression equations are 4X-5Y+33=0 and

20X-9Y-107=0. Find (i) the mean values of X and Y (ii) Find S.D. of Y (iii) coefficient of correlation

between X and Y. (10 Marks)

22. Calculate Laspeyre's index number, Paasche's index number, Marshall – Edgeworth index, Bowley's

index number and Fisher's ideal index and verify whether Fisher's ideal index satisfy Time reversal test

and Factor reversal test.

Items	1995		2000	
	Price	quantity	Price	Quantity
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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