LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

U.G. DEGREE EXAMINATION – **CORPORATE SECRETARYSHIP**

FIRST SEMESTER – **APRIL 2022**

16/17/18UST1AL02 – FUNDAMENTALS OF 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 classification and tabulation.
2. Define sampling.
3. What is meant by frequency polygon?
4. Write any two functions of statistics.
5. Find the median for the following data: 6, 8, 11, 8, 7, 8, 12, 6.
6. Define quartile deviation.
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 regression coefficients.
9. What is rank correlation?
10. Define index numbers.

SECTION – B

Answer any FIVE questions   **(5 X 8 = 40)**

11. Represent the data by a divided bar diagram.

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

12. Explain the different types of sampling.
13. Compute the mean deviation about mean and median for the data given below:

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	4	6	10	20	10	6	4

14. The mean and variance of 100 items are found by a student as 50 and 0.1. If at the time of calculation two items are wrongly taken as 40 and 50 instead of 60 and 30, Find the correct mean and standard deviation.

15. Calculate the Spearman's coefficient of rank 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. From the following data obtain the regression equation of X on Y, and also that of Y on X.

X	6	2	10	4	8
Y	9	11	5	8	7

17. Explain briefly the classification of index numbers.
18. The following are the prices of six different commodities for 2007 and 2008: Compute a price index by simple aggregative method

Commodities	A	B	C	D	E	F
Price in 2007 (Rs.)	40	60	20	50	80	100
Price in 2008 (Rs.)	50	60	30	70	90	110

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Answer any TWO questions   **(2 X 20 = 40)**

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

Marks	0-20	20-40	40-60	60-80	80-100
Frequency	3	17	27	20	9

(ii) Construct a histogram for the following data: (10)

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

20. (i) The scores of two batsman A and B in ten innings during a certain season are: (12)

A	32	28	47	63	71	39	10	60	96	14
B	19	31	48	53	67	90	10	62	40	80

Find which of the two batsmen A, B is more consistent in scoring.

(ii) What is Skewness? How does it differ from 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 Karl Pearson's coefficient of correlation from the following data: (10)

X	6	8	12	15	18	20	24	28	31
Y	10	12	15	15	18	25	22	26	28

22. Calculate the Fisher's ideal index from the following data and show that it satisfies time reversal and factor reversal tests.

Commodity	2006-07		2007-08	
	Price	Value	Price	Value
A	10	100	12	96
B	8	96	8	104
C	12	144	15	120
D	20	300	25	250
E	5	40	8	64
F	2	20	4	24

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