LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **STATISTICS**

FIRST SEMESTER – **APRIL 2024**

UST 1501 – STATISTICAL METHODS

Date: 20-04-2024 Dept. No. Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

	SECTION A - K1 (CO1)	
	Answer ALL the Questions	**(10 x 1 = 10)**
1.	Define the following	
a)	Secondary data	
b)	Kurtosis	
c)	Growth Curve	
d)	Scatter diagram	
e)	Attributes	
2.	**Fill in the blanks**	
a)	Complete enumeration method is also known as _____.	
b)	The median of 5, 8, 3, 2, 9, 10, 4 is _____.	
c)	As time increases_____ curve also increases in height.	
d)	The square root of the product of the two regression coeffcients is equal to _____.	
e)	If (AB), (Aβ), (αB) and (αβ) are all positive then the data is said to be _____.	
	SECTION A - K2 (CO1)	
	Answer ALL the Questions	**(10 x 1 = 10)**
3.	**Match the following**	
a)	Primary data	Highest frequency
b)	Mode	Stability
c)	$\hat{Y}c$	Positive Correlation
d)	Both X and Y increase	Estimated value
e)	Consistency	Indirect interview
4.	**True or False**	
a)	Ordered data are called Nominal data.	
b)	Positively skewed data is symmetric data.	
c)	Logarithmic curve becomes flat as time increases.	
d)	It is assumed that in a linear regression model the relationship exists between dependent and independent variables.	
e)	Two attributes are said to be independent if there are uncorrelated.	
	SECTION B - K3 (CO2)	
Answer any TWO of the following		**(2 x 10 = 20)**
5.	What are the different types of classification of data? Explain in detail with example.	
6.	Calculate the mean, median and mode for the given data.	

x	f
1	5
2	9
3	12
4	17
5	14
6	10
7	6

7. Construct the steps for fitting an exponential growth curve.

8. Calculate the rank correlation for the given marks scored in physics and maths.

Physics	35	23	47	17	10	43	9	6	28
Maths	30	33	45	23	8	49	12	4	31

SECTION C – K4 (CO3)

Answer any TWO of the following **(2 x 10 = 20)**

9. What are the scope of statistics?

10. Calculate Standard deviation and mean for the given data

Class	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 90	90 - 100
Frequency	2	7	12	15	8	3	2

11. Calculate the correlation coefficient for the given data of printer speed and cost of printer.

Speed (ppm)	10	9	11	12	6	5	7	6	12	14
Price(Rs '00)	95	90	90	105	75	75	80	85	110	115

12. Explain the different method of collecting secondary data in detail.

SECTION D – K5 (CO4)

Answer any ONE of the following **(1 x 20 = 20)**

13. Fit the regression lines for the given data and find the weight when age is 12.

Age (X)	9	6	5	8	6	7
Weight (Y)	14	10	9	13	11	12

14. Find the Team which is more consistent and stable. Also find the better team.

No. of Goals scored in a Match	Team A	Team B
0	27	17
1	9	9
2	8	6
3	5	5
4	4	3

SECTION E – K6 (CO5)

Answer any ONE of the following **(1 x 20 = 20)**

15. For the given data calculate the four moments and the measures of skewness and kurtosis

Earnings	50 - 70	70 - 90	90 - 110	110 - 130	130 - 150	150 - 170	170 - 190
No. of Workers	4	8	12	20	6	7	3

16. A group of 2000 fathers were studied and it was found that 12.9% has dark eyes. Among them the ratio of those having sons with dark eyes and light eyes was 1:58. The no. of cases where fathers and sons both had light colours is 1564. Calculate a coefficient of association between darkness of eye colour in fathers and sons. Give the frequencies that would have been observed had there been completely no heredity detected.

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