LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.B.A. DEGREE EXAMINATION – **BUSINESS ADMINISTRATION**

SECOND SEMESTER – **APRIL 2022**

UBU 2502 – BUSINESS STATISTICS

(21 BATCH ONLY)

Date: 18-06-2022 Dept. No. Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

	SECTION A			
Answer ALL the Questions in one or two sentences				
1.	**Define the following**		**5 * 1 = 5 marks**	
i.	Sampling		K1	CO1
ii.	Average		K1	CO1
iii.	Range		K1	CO1
iv.	Regression		K1	CO1
v.	Components of Time series		K1	CO1
2.	**Fill in the blanks**		**5 * 1=5 marks**	
i.	All data generating sources which fall outside the ambit of organization are called _____.		K1	CO1
ii.	_____ is the middle value in a distribution arranged in ascending or descending order.		K1	CO1
iii.	Percentiles divides the data into _____ parts.		K1	CO1
iv.	A line fitted by the method of least squares is the_____.		K1	CO1
v.	_____ variations are random fluctuations and do not fall under any of the three components and are completely unpredictable.		K1	CO1
3.	**True or False**		**5 * 1=5 marks**	
i.	Index makes the diagram confusing.		K2	CO1
ii.	The sum of deviations of all observations from the arithmetic mean is always Zero.		K2	CO1
iii.	Evenly spread distribution will be symmetrical.		K2	CO1
iv.	Simple correlation will have only one variable studied.		K2	CO1
v.	Of the four types of variation, seasonal is the most difficult to predict.		K2	CO1
4.	**Match the following**		**5 * 1=5 marks**	
i.	Method of Least Squares	Data vary widely	K2	CO1
ii.	Spearman's rank correlation	Line of Best Fit	K2	CO1

iii.	Percentiles	ρ (Rho)	K2	CO1
iv.	Geometric Mean	100 equal parts	K2	CO1
v.	Broken bar diagram	√Arithmetic Mean x Harmonic mean	K2	CO1

SECTION B

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

5.	Explain different data collection methods.	K3	CO2
6.	Compute the Geometric mean for the following data: Marks: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 No of students: 3 | 8 | 15 | 20 | 10 | 4	K3	CO2
7.	Calculate mean deviation about the median and its coefficient for the following data: X: 10 | 11 | 13 | 14 | 12 F: 3 | 12 | 12 | 3 | 18	K3	CO2
8.	The following tables gives the ages (X) of Cars in years and annual maintenance cost in Rs.100(Y) X: 1 | 3 | 5 | 7 | 9 Y: 15 | 18 | 21 | 23 | 22 Examine the maintenance cost for a 4-year-old car after finding the regression equation.	K3	CO2

SECTION C

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

9.	Illustrate a histogram and frequency curve for the following distribution. Mid Value: 18 | 25 | 32 | 39 | 46 | 53 | 60 Frequency: 10 | 15 | 32 | 42 | 26 | 12 | 9	K4	CO3
10.	In a class of 50 students, 10 have failed and their average marks is 25. The total marks secured by the entire class is 2810. Conclude with the average marks of those who have passed.	K4	CO3
11.	Compare and Contrast the Regression and Correlation.	K4	CO3
12.	Devise a trend line to the following data by the method of semi averages: Year: 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 Sales: 102 | 105 | 114 | 110 | 108 | 116 | 112	K4	CO3

SECTION D

Answer any One of the following **(1 * 20 = 20 marks)**

13. Predict the mode for the following data using grouping and analysis table: K5 CO4

Class interval	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	9	12	15	16	17	15	10	13

14. The percentage of figures of expenditure incurred in clothing (X) and entertainment(Y) by an average working-class family in a period of 10 years. K5 CO4

Year	2001	2002	2003	2004	2005
X	24	27	31	32	20
Y	11	8	5	3	13
Year	2006	2007	2008	2009	2010
X	25	33	30	28	22
Y	10	2	7	9	2

Estimate

(i) Pearson's coefficient of correlation between X and Y **(10 marks)**

(ii) Spearman's rank correlation coefficient and comment on your results.

(10 marks)

SECTION E

Answer any One of the following **(1 * 20 = 20 marks)**

15. Formulate Pearson's co-efficient for the following data: K6 CO5

Demand (Kg)	85	93	95	105	120	130	150	160
Price (Rs.)	15	18	20	24	30	35	40	50

And also find the probable error.

16. Compose the five yearly moving average of the tea acreage in India from the following data. Plot a graph of actual data and the trend line of the same. K6 CO5

Year	1	2	3	4	5	6	7	8	9	10
Area in '000 acres	672	679	690	702	712	802	807	809	816	821

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