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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

First Semester, Master of Business Administration (MBA)

Semester End Examination; April / July - 2021

Business Analytics

Time: 3 hrs *Max. Marks: 100*

***Note**: Answer all **FOUR** full questions from **PART - A** and **PART - B** (Case Study) is compulsory.*

No.	Questions	Marks	BLs	COs	POs
	PART - A				
1 a.	Define Statistics. Explain where all statistics is used in a business decision?	10	L2	CO1	
b.	Distinguish between Primary and Secondary data. What precautions would you take before using data from secondary source?	10	L4	CO2	
	OR				
2 a.	Define data collection. Discuss the different methods of classification of data.	10	L6	CO1	
b.	The data below shows the mass of 40 students in a class. The measurement is to the nearest kg:				

55	70	57	73	55	59	64	72
60	48	58	54	69	51	63	78
75	64	65	57	71	78	76	62
49	66	62	76	61	63	63	76
52	76	71	61	53	56	67	71

Summarize a frequency table for the data using an appropriate scale and present the same information as a histogram. — 10 L2 CO2

3 a.	What do you understand by 'Central Tendency"? Under what circumstances it would be ideal to use mean, median and mode?					10	L1	CO1
b.	The table below gives data on the heights in cm, of fifty one children:							

Class Interval	140 ≤ h <150	150 ≤ h <160	160 ≤ h <170	170 ≤ h <180
Frequency	6	16	21	8

Estimate the Mean height, Median mode. — 10 L6 CO3

OR

4 a.	Compute the Geometric Mean and Harmonic Mean of the following distribution:					10	L6	CO3

Marks	0 - 10	10 - 20	20 - 30	30 - 40
No. of students	5	8	3	4

b. Compute the lower and upper quartiles, fourth decile and 70^{th} percentile for the following distribution: — 10 L4 CO2

Marks Group	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
No. of Students	5	6	15	10	5	4	2	2

Contd… 2

5 a. Why is the standard deviation the most widely used measure of dispersion? Explain. 10 L1 CO1

b. Assess the S.D. and coefficient of variation (C.V.) for the following table: 10 L5 CO3

Class Interval	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
Frequency	5	10	20	40	30	20	10	5

OR

6 a. For a distribution, Bowley's and coefficient of skewness is –0.56, Q_1 = 16.4 and Median = 24.2. What is the coefficient of Quartile deviation? 10 L1 CO2

b. "Measures to dispersion and skewness are complimentary to one another in understanding a frequency distribution". Elucidate the statement. 10 L1 CO1

7 a. Calculate the coefficient of correlation from the data given below by the method of differences: 10 L4 CO2

X	78	89	97	69	59	79	68	57
Y	125	137	156	112	107	136	123	108

b. The students got the following percentage of marks in Economics and Statistics: 10 L4 CO2

Roll No.	1	2	3	4	5	6	7	8	9	10
Marks in Economics	78	36	98	24	75	82	90	62	65	40
Marks in Statistics	84	51	91	60	68	62	86	58	53	47

Calculate the coefficient of correlation.

OR

8 a. Using three-yearly moving averages, determine the trend and short-term-error 10 L5 CO2

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Production (in 000 tons)	21	22	23	25	24	22	25	26	27	26	25

b. Given are the following price-quantity data, with price quoted in Rs. Per kg and production in qtls: 10 L1 CO2

	2014		2019	
Item	Price	Production	Price	Production
Fish	15	500	20	600
Mutton	18	590	23	640
Chicken	22	450	24	500

Find ; i) Simple Aggregative Price Index with 2014 as the base

ii) Simple Aggregative Quantity Index with 2014 as the base

PART - B (Compulsory)

9. Following is the data of sales and profit in lac rupees:

Sales (*X*)	45	48	50	55	65	70	75	72	80	85
Profit (*Y*)	25	30	35	30	40	50	45	55	60	65

a. Derive the regression equation of *Y* on *X*. 10 L4 CO2

b. Derive the regression equation of *X* on *Y*. 10 L4 CO2

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