CBCS SCHEME

USN | | | | | | | | | | |

22MBA14

First Semester MBA Degree Examination, Jan./Feb. 2023
Statistics for Managers

Time: 3 hrs. Max. Marks: 100

Note: 1. *Answer any FOUR full questions from Q.No.1 to Q.No.7.*
2. *Question No. 8 is compulsory.*
3. *Use of Statistical Tables may be permitted.*
4. *M : Marks , L: Bloom's level , C: Course outcomes.*

			M	L	C
Q.1	a.	Classify the importance of statistics.	03	L2	CO1
	b.	Find the 3rd quartile, quartile deviation and coefficient of quartile deviation. Wages (in Rs.): 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 Number of persons: 1 | 3 | 11 | 21 | 43 | 21 | 9	07	L3	CO2
	c.	From the prices x and y of shares A and B respectively given below, state which share is more stable in value? Interpret. Price of share A, X: 55 | 54 | 52 | 53 | 56 | 58 | 52 | 50 | 51 | 49 Price of share B, Y: 108 | 107 | 105 | 105 | 106 | 107 | 104 | 103 | 104 | 101	10	L3	CO2
Q.2	a.	Distinguish between correlation and regression.	03	L4	CO2
	b.	From the following table solve the coefficient of correlation by Karl Pearson's method. X: 6 | 2 | 10 | 4 | 8 Y: 9 | 11 | 5 | 8 | 7	07	L3	CO2
	c.	From the following data, calculate the rank correlation coefficient after making adjustment for tied ranks and interpret. X: 48 | 33 | 40 | 9 | 16 | 16 | 65 | 24 | 16 | 57 Y: 13 | 13 | 24 | 6 | 15 | 4 | 20 | 9 | 6 | 19	10	L3	CO2
Q.3	a.	Explain the rules of probability.	03	L2	CO3
	b.	The number of defects per unit in a sample of 330 units of manufactured products was given below. Estimate Poisson distribution to the data given: [$e^{-0.439} = 0.6447$). No. of defects: 0 | 1 | 2 | 3 | 4 No. of units: 214 | 92 | 20 | 3 | 1	07	L5	CO3
	c.	The heights of mothers and daughters are given in the following table. From the tables of regression, estimate the expected average height of daughter when the height of the mother is 64.5 inch. Interpret. Height of mother, X in inches: 62 | 63 | 64 | 64 | 65 | 66 | 68 | 70 Height of daughter, Y in inches: 64 | 65 | 61 | 69 | 67 | 68 | 71 | 65	10	L3	CO2
Q.4	a.	Dissect Time Series Analysis and its uses.	03	L4	CO4
	b.	Explain the objectives and components of time series analysis.	07	L4	CO4

	c.	You have been provided with the figures of production (in 000's tons) of sugar factory. (i) Fit a straight line and apply the method of Least Square and find trend value. (ii) What is the yearly increase in production? (iii) Estimate production in 2023.	10	L5	CO4
Q.5	a.	Dissect Hypothesis Testing.	03	L4	CO4
	b.	Explain the procedure of hypothesis testing.	07	L5	CO4
	c.	Estimate the seasonal index for the following data assuming that there is no need to adjust the data for the trend. [Simple average method]	10	L5	CO4
Q.6	a.	Explain the method of estimating trends.	03	L4	CO4
	b.	Fit a binomial distribution to the following data and interpret.	07	L3	CO3
	c.	The sales data of an item in six shops before and after a special promotional campaign are as under: Can the campaign be judged to be a success? Test at 5% level of significance. Interpret.	10	L5	CO4
Q.7	a.	Explain the term "cyclical component of a time series".	03	L2	CO4
	b.	Calculate three yearly moving averages for the following data and comment on the results:	07	L5	CO4
	c.	Estimate seasonal indices by the Ratio to Moving Average Method from the following data of the sales (y) of a firm in lakhs of rupees.	10	L5	CO4
Q.8		The hourly wages of 1000 workmen are normally distributed around a mean of Rs.70 and with a standard deviation of Rs.5. Estimate the number of workers whose hourly wages will be (i) Between Rs.69 and Rs.72 (ii) More than Rs.75 (iii) Less than Rs.63 (iv) Also estimate the lowest hourly wages of the 100 highest paid workers.	20	L5	CO3

Quarter	2017	2018	2019	2020	2021	2022
1	3.5	3.5	3.5	4.0	4.1	4.2
2	3.9	4.1	3.9	4.6	4.4	4.6
3	3.4	3.7	3.7	3.8	4.2	4.3
4	3.6	4.8	4.0	4.5	4.5	4.7

x	0	1	2	3	4
f	28	62	46	10	4

Shops	A	B	C	D	E	F
Before campaign	53	28	31	48	50	42
After campaign	58	29	30	55	56	45

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Y	242	250	252	249	253	251	257	260	265	262

Year	I Quarter	II Quarter	III Quarter	IV Quarter
2001	68	62	61	63
2002	65	58	66	61
2003	68	63	63	67

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