Course Code: 25MB1C04

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE(**AUTONOMOUS**)

I – MBA I - Semester Regular Examinations (BR25), Feb - 2026

QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS(MBA)

Time: 3 hours Max. Marks: 70

PART - A Answer ONE Question from each UNIT (5 x 12 = 60 Marks)
All Questions Carry Equal Marks
PART - B Compulsory (1 x 10 = 10 Marks)

PART -A

	UNIT-I	**Marks**	**CO**	**BL**
1.a)	What are Quantitative Techniques? Explain their classification and applications in business	6M	CO1	L3
b)	Discuss the relationship between Quantitative Techniques and other disciplines	6M	CO1	L3
	OR			
2.a)	How are Quantitative Techniques used in business decision making? Provide examples	6M	CO1	L3
b)	What are the limitations of Quantitative Techniques? Explain with examples	6M	CO1	L2

	UNIT-II	**Marks**	**CO**	**BL**
3.a)	Find Mean, Median, Mode and Standard deviation to the following data			

C.I	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79
f	8	32	142	216	240	206	143	13

12M CO2 L3

OR

4.a) Calculate the spearman's rank correlation coefficient for the following data

X	37	42	29	46	51	18	22	34	59
Y	70	82	67	74	69	58	42	68	89

6M CO2 L3

b) Suppose the weights of 800 male students are normally distributed with mean 140 pounds and standard deviation 10 pounds. Find the number of students whose weights are — 6M CO2 L3
i) Between 138 and 148 pounds ii) More than 152 pounds.

	UNIT-III	**Marks**	**CO**	**BL**
5.a)	Explain the steps involved in the decision-making process with a suitable example	6M	CO3	L2
b)	Describe the various criteria for decision making under uncertainty	6M	CO3	L1
	OR			
6.a)	Explain decision making under certainty, risk, and uncertainty, highlighting their differences	12M	CO3	L2

UNIT-IV

		Marks	CO	BL
7.a)	Write the procedure for testing of hypothesis	6M	CO4	L4
b)	The average mark scored by 32 boys is 72 with a S.D of 8. While that for 36 girls is 70 with a S.D of 6. Does this indicate that the boys perform better than girls at level of significance 0.05?	6M	CO4	L4

OR

8.a)	The mean and standard deviation of a population are 11,795 and 14,054 respectively. If n = 50, find 95% confidence interval for the mean.	6M	CO4	L3
b)	The measurements of the output of two units have given the following results. Assuming that both samples have been obtained from the normal population at 1% level, test whether the two populations have the same variance.	6M	CO4	L4

Unit-A	14.1	10.1	14.7	13.7	14.0
Unit-B	14.0	14.5	13.7	12.7	14.1

UNIT-V

		Marks	CO	BL
9.a)	To study the performance of 3 detergents and 3 different water temperatures the following whiteness readings were obtained with specially designed equipments	12M	CO5	L4

Water Temperature	Detergent A	B	C
Cold water	57	55	67
Warm water	49	52	68
Hot water	54	46	58

Perform a two way ANOVA using 5% LOS

OR

10.a)	1000 students at college level were graded according to their IQ and the economic conditions of their home. Use χ^2 test to find out whether there is any association between condition at home and IQ ($\alpha = 0.05$)	6M	CO5	L4

	IQ	
Economic condition	High	Low
Rich	460	140
Poor	240	160

b)	Write a short note on ANOVA	6M	CO5	L1

PART – B

CASE STUDY

		Marks	CO	BL
11	In a partially destroyed laboratory record of an analysis of correlated data the following results only are legible V(x) = 9, Regression equations are $8x - 10y + 66 = 0$, $40x - 18y - 214 = 0$. Find			
	(i) The mean values of x &y	10M	CO2	L5
	(ii) The correlation coefficient between x & y			
	(iii) Find σ_y			

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