



**Continuous Assessment Test, CAT II, March 2023**

Programme	: MIA	Semester	: Winter 2022-23
Course Title	: Business Analytics with Spread Sheet Modelling	Code	: MGT1058
Faculty	: Dr. Sumathi G N	Slot	: GI
Duration	: 90 mins	Class Nbr	: CH2022235000934
		Max. Marks	: 50

**Answer all the Questions**

Q.No.	Sub. Sec.	Question Description	Marks
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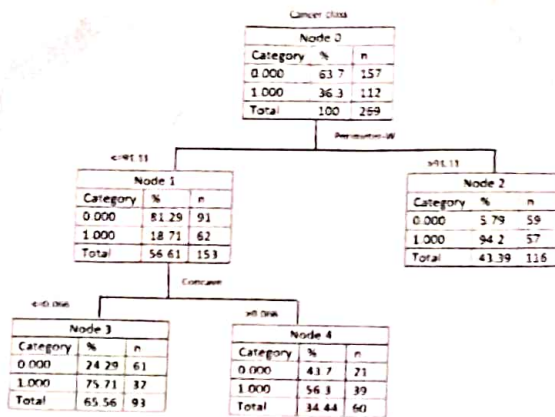
1. The forecasting models are validated using accuracy measures such as MASE, SAMPE, MAE and RMSE. Elucidate the below metrics and comment on the model accuracy. 10

Statistic	Value
Alpha	0.50
Beta	0.00
Gamma	0.00
MASE	0.80
SMAPE	0.07
MAE	244.37
RMSE	309.24

2. The table presents the mean values of variables in each cluster. K-means clustering is used to group the 120 Tollywood movies. 10
1. Identify the variables used in clustering
  2. Identify the suitable distance measure
  3. Identify the number of clusters formed
  4. Present the characteristics of various cluster
  5. Give the interpretation for the distance between centroids.

	Cluster		
	1	2	3
Box office collection	305.1	72.9	32.4
Profit	214.8	34.3	10.9
Earning ratio	4.4	3.1	1.53
Budget	80.3	28.6	11.5
Youtube views	14399358	4506403	1242508
Youtube likes	42311	11857	438
Youtube dislikes	6169	1068	441
Distance between final cluster centres			
Cluster 1		10793027.804	14656922.32
Cluster 2	10793027.804		3863907.23
Cluster 3	14656922.32	3863907.23	

3.



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CART tree is used for prediction of cancer.

1. Identify the variables used for prediction

2. Identify the terminal nodes.

3. Compare the nodes all the terminal nodes.

4. Give the interpretation.

4.

Online purchases have become common among us. The data on the amount of money spent by customers at an e-commerce portal, monthly income, and family size is collected for 300 customers. The table presents the model summary and coefficients. Identify the independent and dependent variables. Interpret the regression results.

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Model	R	R-Square	Adjusted R-Square	Std. error of the estimate	
1	0.810	0.746	0.742	0.49932	
	Unstandardized coefficient		Standardized coefficient		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.109	0.114		53.570	0.000
Income	1.66E-5	0.000	0.878	18.812	0.000
Family size	-.160	0.032	-0.210	-5.026	0.000