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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E.

Branch: Medical Electronics Engineering

Course Code: 19ML7PCMCL

Course: Machine Learning

Semester: VII

Duration: 3 hrs.

Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

			UNIT - I	CO	PO	Marks
Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.	1	a)	With the help of a flowchart and an example, illustrate the lifecycle of data science.	CO1	PO1	10
		b)	Are functions and methods the same? Explain with an example.	CO1	PO1	10
			UNIT - II			
	2	a)	Why do we need Data Visualization? Explain with an example.	CO2	PO5	10
		b)	What is linear regression? Explain its implementation with pseudocode.	CO2	PO5	10
			UNIT - III			
	3	a)	What is cost and cost function? Derive residual from cost function.	CO3	PO3	10
		b)	Differentiate between Bagging and boosting in Ensemble learning?	CO3	PO3	10
			UNIT - IV			
	4	a)	What is a confusion matrix? derive different performance metrics from the confusion matrix of a binary classifier.	CO2	PO5	10
		b)	Explain the following feature selection methods used in machine learning. (i) Recursive feature elimination (RFE) (ii) LASSO Regularization L1	CO2	PO5	10
			OR			
	5	a)	Explain Naive Bayes Classifier with its advantage and disadvantages.	CO2	PO5	10
		b)	What is the curse of dimensionality and how can it be overcome?	CO2	PO5	10
			UNIT - V			
	6	a)	What is causing the transition from AI to XAI?	CO5	PO12	5

	b)	What are IaaS, PaaS, and SaaS? Explain with an example for each.	<i>CO5</i>	<i>PO12</i>	5
	c)	Discuss the Sequential Covering Algorithms.	<i>CO5</i>	<i>PO12</i>	10
		OR			
	7	a) The SHAP library offers different visualizations? Explain them.	<i>CO5</i>	<i>PO5</i>	10
		b) Explain What if Tool for Model interpretability.	<i>CO5</i>	<i>PO5</i>	10

B.M.S.C.E. - ODD SEM 2023-24