

Exam. Code: 1000

Sub. Code: 34995

2056

M.E. (Computer Science and Engineering)

Second Semester

Elective - III

CS-8205: Machine Learning

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

1	a	Define Machine Learning and mention its main types.	2
	b	What are the conditions in which Gradient Descent is applied?	2
	c	What is impurity? Discuss with any one measure.	2
	d	Write a short note on feature correlation	2
	e	What is dimensionality reduction? Give its importance in learning	2
		Section A	
2		Explain different model evaluation techniques in machine learning. Discuss cross-validation, accuracy, precision, recall, and F1-score.	10
3		How logistic regression can be used in discriminative learning by optimizing conditional likelihood? Explain the Training of a logistic regression model.	10
4a		Discuss various intuitions of Linear regression. How it handles the outliers? Explain with examples	5
b		With suitable example explain the task of binary classification. Discuss different quantities and evaluation measures for classifiers	5
		Section B	
5		Derive the Backpropagation rule considering the training rule for Output Unit weights and Training Rule for Hidden Unit weights	10
6		Differentiate hierarchical clustering with distance based clustering.	10
7		Explain the following a) Principle Component Analysis b) Back Propagation training algorithm for hidden neuron c) Back Propagation training algorithm for output neuron	10

x-x-x