Reg. No.															

Question Paper Code	13838

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Seventh Semester

Computer Science and Engineering (IoT)

20CIPC701 - APPLIED MACHINE LEARNING

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Machine learning is a subset of which field? (a) Artificial Intelligence (b) Data Mining (c) Neural Networks (d) Statistics	1	K_1	CO1
2.	Which type of learning involves labelled data? (a) Unsupervised (b) Supervised (c) Reinforcement (d) Evolutionary	1	K_1	CO1
3.	What is the main goal of data pre-processing? (a) To add noise (b) To clean and prepare data (c) To reduce model accuracy (d) To increase redundancy	1	K1	CO2
4.	Which technique is used for dimensionality reduction? (a) PCA (b) KNN (c) SVM (d) CNN	1	K1	CO2
5.	The algorithm used for classification among the following is: (a) Decision Tree (b) K-Means (c) PCA (d) EM	1	K1	CO3
6.	Logistic Regression is used for: (a) Regression only (b) Classification (c) Clustering (d) Feature extraction	1	K1	CO3
7.	K-Means algorithm is a type of: (a) Supervised Learning (b) Unsupervised Learning (c) Reinforcement Learning (d) Ensemble Learning	1	K1	CO4
8.	Boosting is primarily used to: (a) Reduce bias (b) Reduce variance (c) Both a and b (d) None	1	K1	CO4
9.	Which of the following is used in CNN? (a) Activation function (b) Clustering (c) Bagging (d) PCA	1	K1	CO5
10.	Back propagation is used to: (a) Optimize weights (b) Reduce dataset (c) Cluster data (d) Extract features	1	K1	CO5

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

		Marks	K – Level	CO
11.	Define Machine Learning and its objectives.	2	K1	CO1
12.	Write the importance of Regularization technique and mention its types..	2	K1	CO1
13.	What are data cleaning and its importance?	2	K1	CO2
14.	Compare PCA and Kernel PCA.	2	K2	CO2
15.	Define Naïve Bayes Classifier with an example.	2	K1	CO3
16.	Compare Linear Regression and Logistic Regression.	2	K2	CO3
17.	What is Ensemble Learning and mention its types.	2	K1	CO4
18.	Differentiate Bagging and Boosting.	2	K2	CO4
19.	Define Activation Function in Neural Networks.	2	K1	CO5
20.	Write a note on Convolutional Neural Networks.	2	K1	CO5
21.	List the application of Machine Learning.	2	K1	CO5
22.	What are the challenges faced during training the Deep Learning models?	2	K1	CO5

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a) (i)	Explain the different types of Machine Learning with suitable examples.	*5*	*K2*	*CO1*
	(ii)	Summarize the Machine Learning process in detail.	*6*	*K2*	*CO1*
		OR			
	b)	Explain Regression and Classification with real-time applications.	*11*	*K2*	*CO1*
24.	a)	Describe the steps involved in Data Pre-processing with suitable examples.	*11*	*K2*	*CO2*
		OR			
	b)	Explain the techniques of Dimensionality Reduction and their significance.	*11*	*K2*	*CO2*
25.	a)	Illustrate any two Supervised Learning algorithms with examples.	*11*	*K2*	*CO3*
		OR			
	b)	Summarize the mathematical model for Multiple Linear Regression and discuss its use.	*11*	*K2*	*CO3*
26.	a)	Illustrate with an example of K-Means Clustering and Expectation Maximization algorithms.	*11*	*K2*	*CO4*
		OR			
	b)	Compare and contrast Bagging, Boosting, and Stacking ensemble learning.	*11*	*K2*	*CO4*
27.	a)	Explain the architecture and working of a Multilayer Perceptron with neat diagram.	*11*	*K2*	*CO5*
		OR			
	b)	Describe the concept of Convolution Neural Networks and their applications.	*11*	*K2*	*CO5*
28.	a)	Outline the role of Auto encoders and Generative Models in Deep Learning.	*11*	*K2*	*CO5*
		OR			
	b)	Explain the use of Deep Learning in real-world applications such as image recognition or NLP.	*11*	*K2*	*CO5*