

Seventh Semester B.E./B.Tech. Degree Examination, June/July 2026

Machine Learning – II

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks , L: Bloom's level , C: Course outcomes.

Module – 1		M	L	C
Q.1	a. Describe the steps in designing a machine learning system using an example.	10	L2	CO1
	b. Describe the Candidate – Elimination Algorithm with example.	10	L2	CO1
OR				
Q.2	a. Explain Inductive Bias. Why is it necessary in ML?	10	L2	CO1
	b. Explain the perspective and key issues in machine learning.	10	L2	CO1
Module – 2				
Q.3	a. Explain the Sequential Covering Algorithm for rule learning with an example.	10	L2	CO2
	b. Describe Explanation – Based Learning (EBL) with an example what are its key assumptions?	10	L2	CO2
OR				
Q.4	a. What are the Key Properties of EBL? What are the limitations and explanation based learning?	10	L1	CO2
	b. Describes how EBL derives Search Control Knowledge.	10	L2	CO2
Module – 3				
Q.5	a. What is Adaboost? Explain the working method of Adaboost.	10	L2	CO3
	b. Explain the effectiveness of different ways to combine classifiers in ensemble learning.	10	L2	CO3

OR					
Q.6	a.	Explain the K-means algorithm in detail.	10	L2	CO3
	b.	Describe how Random Forests use ensemble learning to improve prediction accuracy.	10	L2	CO3
Module – 4					
Q.7	a.	What is Vector Quantization? How it is used in unsupervised learning?	10	L1	CO4
	b.	Explain the concept of a Self – Organizing Feature Map (SOM) with example.	10	L2	CO4
OR					
Q.8	a.	Explain the Proposal Distribution Method in detail.	10	L2	CO4
	b.	Explain the concept of Markov Chain Monte Carlo in detail.	10	L2	CO4
Module – 5					
Q.9	a.	Explain the Bayesian Network in detail with example.	10	L2	CO4
	b.	How is approximate inference performed in Bayesian Networks? Explain.	10	L2	CO4
OR					
Q.10	a.	Explain the importance of Viterbi Algorithm and Forward Algorithm in HMMs.	10	L2	CO4
	b.	Describe the Baum-Welch Algorithm. Write the Python implementation code of Baum-Welch Algorithm.	10	L2	CO4
