Reg. No.												

Question Paper Code	12430

B.E. / B.Tech - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

Computer Science and Engineering (Cyber Security)

20SCPC303 - MACHINE LEARNING IN CYBER SECURITY

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	List the advantages of Breadth First Search.	*2,K1,CO1*
2.	Define Path Cost.	*2,K1,CO1*
3.	Explain unsupervised learning and unsupervised learning.	*2,K2,CO2*
4.	Write the difference between Overfitting and Underfitting.	*2,K2,CO2*
5.	List the application of hidden markov model.	*2,K1,CO3*
6.	Why is it called Naïve Bayes?	*2,K1,CO3*
7.	List the disadvantage of dimensionality reduction.	*2,K1,CO4*
8.	Define the curse of dimensionality.	*2,K1,CO4*
9.	Difference between Bayesian networks and decision theory.	*2,K2,CO5*
10.	Explain the probability axioms.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Discuss the following search Technique with the help of an example. Also discuss the benefits and shortcoming of each. (i) Breadth First Search (ii) Depth First Search	*13,K2,CO1*
		OR	
	b)	Explain the following search strategies in detail. (i) Adversarial search (ii) A* search	*13,K2,CO1*
12.	a)	Describe in detail classification and regression with performance metrics.	*13,K2,CO2*
		OR	
	b)	Explain supervised learning and unsupervised learning with types and limitations.	*13,K2,CO2*

13. a) Describe the Naive Bayes Classifier Algorithm and Hidden markov model in detail. *13,K2,CO3*

OR

b) Illustrate in detail Support vector Machine algorithm. List and explain the type of SVM algorithm. *13,K2,CO3*

14. a) Describe the subspace clustering and association rule learning with examples. *13,K2,CO4*

OR

b) Define about principal component analysis and linear discriminant analysis in detail. *13,K2,CO4*

15. a) Describe the Gibbs sampling and Inference by Markov chain simulation. *13,K2,CO5*

OR

b) Describe the below list of terminology. *13,K2,CO5*
(i) Full joint Distribution
(ii) Baye's rule and its use
(iii) Independence

PART - C (1 × 15 = 15 Marks)

16. a) Illustrate in detail Training model and creating a machine learning model. *15,K3,CO6*

OR

b) Describe Perceptron with types and characteristics in detail. *15,K3,CO6*