

SRM UNIVERSITY DELHI-NCR, SONEPAT

Registration No.:

MST-II (December-2022)
B. Tech (CSE-Core) VII Semester

Subject Code: CS 4029

Duration: 90 min

Subject Name: Machine Learning

Max. Marks: 50

Note: Question Paper consists of two parts (Part-A and Part-B).

All Questions are compulsory in Part-A.

Answer any THREE Questions from Part-B

PART A:(10*2)

S.No	Question(s) x 2 Marks each	Course Learning Outcome
1.	What is the limitation of bayes' optimal classifier?	CLO3
2.	Discuss some of the issues in decision tree learning.	CLO2
3.	Draw an example of bayesian belief networks.	CLO3
4.	State the use of EM-algorithm in machine learning.	CLO3
5.	Define Gibb's algorithm for Bayesian learning method.	CLO4
6.	What does schema state theorem establishes?	CLO4
7.	How we can calculate the fitness function?	CLO4
8.	What role does mutation play in GA?	CLO4
9.	What is the significance of alternate hypothesis in hypothesis testing?	CLO5
10.	How do you calculate the expected value in chi-square testing?	CLO5

PART B:(10*3)

S. No	Question(s) x 10 Marks each	Course Learning Outcome
11.	State and prove Bayes' theorem. Explain the idea behind the naïve bayes' classifier as machine learning model.	CLO3
12.	Consider four e-mail accounts E1, E2, E3, E4 on which you receive 40%, 20%, 25%, 15% emails out of which the SPAM mails are 2%, 10%, 1.5%, and 12% on respective accounts. A SPAM email is selected randomly. Calculate the probability, for each of these accounts. that the selected email belongs to the corresponding account.	CLO4
13.	Explain the steps involved in problem solving using Genetic algorithms	CLO4
14.	Write a short note on: i. Learning and evolution theory in GA ii. Genetic programming	CLO5