Reg. No.															

Question Paper Code	12759

M.E./M.Tech - DEGREE EXAMINATIONS, APRIL / MAY 2024

Second Semester

M.E - Big Data Analytics

20PBDPC203 – MACHINE LEARNING TECHNIQUES

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Define probabilistic models.	2	K1	CO1
2.	Point out applications of machine learning.	2	K2	CO1
3.	Describe probability theory.	2	K2	CO2
4.	Label the set of instances with an example.	2	K1	CO2
5.	List out the characteristic to which the back propagation algorithm is used.	2	K1	CO3
6.	Define bagging.	2	K1	CO3
7.	Identify the role of Gaussian mixture model in machine learning.	2	K2	CO4
8.	State unsupervised learning.	2	K1	CO4
9.	Define undirected graphical model.	2	K1	CO5
10.	Describe active learning.	2	K2	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	Explain in detail the component structure of machine learning.	13	K2	CO1
		OR			
	b)	Interpret the design of learning system with an example.	13	K2	CO1
12.	a)	Compare useful perspectives and issues in machine learning in detail.	13	K2	CO2
		OR			
	b)	Illustrate the Bayes decision theory with an example.	13	K2	CO2
13.	a)	Discuss about Bayesian logistic regression with an example.	13	K3	CO3
		OR			
	b) i)	Summarize regression Trees – Pruning.	7	K2	CO3
	ii)	Discuss about support vector machines.	6	K2	CO3

14.	a)	Associate the concept of EM Algorithm with a suitable example.	*13*	*K2*	*CO4*
		OR			
	b)	Define clustering. Explain K-means algorithm in detail with an example.	*13*	*K2*	*CO4*
15.	a)	Interpret learning in probabilistic graphical models with an example.	*13*	*K3*	*CO5*
		OR			
	b)	Compare the major difference between CRF conditional random field and HMM hidden. Explain both in detail.	*13*	*K3*	*CO5*

PART - C (1× 15 = 15 Marks)

16.	a)	Discuss about ensemble learning algorithm complexity and occam's razor.	*15*	*K2*	*CO6*
		OR			
	b)	Illustrate in detail about sampling method of Monte Carlo simulation.	*15*	*K2*	*CO6*