Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U5E03

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Fifth Semester

Artificial Intelligence & Data Science

21UAD503 - MACHINE LEARNING TECHNIQUES

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1.	Identify the advantages of machine learning algorithms.	CO2-App
2.	What are the types of Machine learning techniques?	CO1-U
3.	Explain Inductive machine learning?	CO1-U
4.	Define discrete distributions techniques in machine learning techniques.	CO1-U
5.	Define Back propagation algorithm.	CO1-U
6.	Define sigmoid activation function.	CO1-U
7.	Illustrate the real time applications of Unsupervised Learning?	CO2-App
8.	What are the Dimensionality reduction techniques?	CO1-U
9.	What is meant by RNN?	CO1-U
10.	What are the key components of HMM?	CO1-U

PART – B (5 x 16= 80 Marks)

11.	(a)	Short note on a) Bias and variance (8) b) Bias and variance trade off (8)	CO1-U	(16)
		Or		
	(b)	Explain in detail about the performance metrics for evaluation of machine learning models.	CO1-U	(16)

12.	(a)	Apply the Discrete Distribution techniques with real time examples	CO2-App	(16)
		Or		
	(b)	Apply the Monte Carlo Approximation with real time machine learning applications.	CO2-App	(16)
13.	(a)	Determine activation function and list few activation function with description.	CO1-U	(16)
		Or		
	(b)	Discuss the steps involved in Back propagation algorithm.	CO1 U	(16)
14.	(a)	How dimensionality reduction is important in NN? Justify.	CO1 U	(16)
		Or		
	(b)	Explain in detail about K-Means Clustering Algorithm with suitable examples.	CO1 U	(16)
15.	(a)	Explain in detail about RNN and its types with real time applications.	CO1 U	(16)
		Or		
	(b)	Explain the functionality of LSTM and its types with suitable examples.	CO1 U	(16)