(Please write your Enrollment Number) Enrollment No. 01704942023

End-Term Examination
(CBCS)(SUBJECTIVE TYPE)(OffLine)
Course Name:<>, Semester:<>
(May, 2024)

Subject Code: MCA 104	Subject: Machine Learning
Time :3 Hours	Maximum Marks :60

Note:Q. 1 is compulsory. Attempt one question each from the Units I, II, III & IV.

Q1			(2.5*8=20)	
	(a)	Explain Factor Analysis and its types.		
	(b)	Define Well Posed Learning problem and apply it on robot driving learning program.		
	(c)	What are Splines and explain its types.		
	(d)	Why do we need KNN? How does KNN work (Define only steps)?		
	(e)	Elaborate the concept of Internal validation and External validation in cluster learning.		
	(f)	Provide a graphical representation of Markov Decision Process (MDP) model and state key components of MDP framework.		
	(g)	Define Monte-Carlo method and plug-in principle.		
	(h)	Explains the types of Machine Learning.		
UNIT-I				
Q2	What do you mean by 'Curse of Dimensionality'? How do you solve it? Explain any two methods to solve Curse of Dimensionality in detail.		(10)	
Q3	Explain Machine Learning Process in detail and describe the steps for designing learning system.		(10)	
UNIT-II				
Q4	Explain the algorithm of Support Vector Machine in detail. What is the role of Kernel in SVM? Also, list some advantages and disadvantages of SVM.		(10)	
Q5	Describe the working of Perceptron with algorithm. Also, differentiate between Forward and Backward Propagation.		(10)	
UNIT-III				
Q6	Write down the K-means algorithm. Explain the types of Hierarchical clustering along with examples.		(10)	
Q7	What is Reinforcement learning and describe its working with a diagram and example? Also, explain the types of Reinforcement.		(10)	
UNIT-IV				
Q8	Explain Hidden Markov Model (HMM) in detail with diagram. Also, provide a step wise algorithm to implement HMM.		(10)	
Q9	Explain the concept of graphical model and define some of its types. Also, describe Bayesian Networks along with an example.		(10)	