

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)

IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023
ARTIFICIAL NEURAL NETWORKS
(ECE Branch)

Time: 3 hours

Max. Marks: 60

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

PART-AAnswer **all** the questions in Part-A (5X2=10M)

Q.No.	Questions	Marks	CO	KL
1.	a) Discuss the role of activation function in artificial neuron.	[2M]	1	3
	b) List the different feedback networks.	[2M]	2	2
	c) What are the unconstrained organization techniques?	[2M]	3	1
	d) Mention the demerits of Back propagation Network.	[2M]	4	3
	e) Write about associative memories.	[2M]	5	5

PART-BAnswer **One Question from each UNIT (5X10=50M)**

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	a) Explain the various model of artificial neural networks with their corresponding advantages and disadvantages	[5M]	1	3
	b) Write history of artificial neural system development in detail.	[5M]	1	5
OR				
3.	a) What is an artificial neural network? Describe the characteristics of artificial neural networks?	[5M]	1	1
	b) Briefly explain the historical developments of ANN, with a mention of their potential applications.	[5M]	1	3
UNIT-II				
4.	a) Discuss the methods, which have been developed to improve generalization of neural network learning	[5M]	2	3
	b) State and explain the generalized delta learning rules.	[5M]	2	3
OR				
5.	a) Write the Comparisons Of Neural Network Learning Rules in detail.	[5M]	2	5
	b) Design a network using Hebbian Learning Rule to Implementation of AND Gate	[5M]	2	5
UNIT-III				
6.	a) Discuss LMS algorithm.Determine the stability and rate of convergence condition for LMS algorithm.	[5M]	3	3
	b) Discuss pattern mode training and batch mode training in back propagation algorithm	[5M]	3	3
OR				
7.	a) Discuss about Learning Rate Annealing Techniques in detail.	[5M]	3	3
	b) Write and explain initialization, activation, computation of actual response adaptation of weight vector and continuation operations of perceptron convergence theorem.	[5M]	3	3

UNIT-IV					
8.	a)	With suitable diagram explain the concept of back propagation? Derive update equations for weight elements of multi-layer feed forward neural network.	[5M]	4	3
	b)	Discuss about Markov Decision Processes	[5M]	4	3
OR					
9.	a)	Explain in detail Activation function involved in the computation back propagation	[5M]	4	3
	b)	How to improve the performance of back propagation learning algorithm through free parameters? Write about its convergence	[5M]	4	2
UNIT-V					
10.	a)	Explain k-means Clustering algorithm.	[5M]	5	3
	b)	Explain briefly Clustering complexity	[5M]	5	3
OR					
11.	a)	Discuss about complexity theory in detail	[5M]	5	3
	b)	Discuss about gradient descent in detail	[5M]	5	3
