Question Paper

Exam Date & Time: 13-May-2023 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES END SEMESTER THEORY EXAMINATION-MAY 2023 IV SEMESTER B.Sc.(APPLIED SCIENCES) IN ENGG.

ARTIFICIAL NEURAL NETWORK [ICS 246]

Marks: 50

Duration: 180 mins.

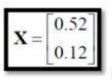
Answer all the questions.

Missing data, if any,may be suitably assumed.

1)	a)	With a neat sketch, explain feed-forward neural networks and recurrent neural networks.	(5)
	b)	Differentiate feed-forward neural networks and recurrent neural networks.	(5)
2)	a)	Differentiate the working principles of supervised and unsupervised learning.	(5)
	b)	Explain with example learning rule for each type of learning.	(5)
3)	a)	Distinguish between linearly separable and nonlinearly separable problems.	(2)
	b)	Solve a non-linearly separable problem with the Radial basis function using four receptors.	(8)
4)		Explain the main essential processes in Self-Organizing Maps in detail.	(5)

a)

^{b)} Suppose, for instance, that the 2-dimensional input vector X is presented to the three-neuron Kohonen network. Calculate the weight changes during the first cycle through the data, taking training vectors in the given order.



learning rate =0.1