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

Question Paper Code: U2904

M.E. DEGREE EXAMINATION, NOV 2024

Professional Elective

Power Electronics and Drives

21PPE504– SOFT COMPUTING TECHNIQUES

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1.	(a)	(i) What are linearly inseparable problems? How to solve X-OR problem?	CO1- U	(10)
		(ii) Explain perceptron learning for pattern classification with example.	CO1- U	(10)
		Or		
	(b)	Implement OR function with binary Input and bipolar target using perceptron training algorithm up to two epochs	CO1- App	(20)
2.	(a)	With neat architecture, write the training and testing algorithm used in Discrete Hopfield Network.	CO2- U	(20)
		Or		
	(b)	Explain the architecture of ART1 network. State in detail the computational and supplemental units	CO2- U	(20)
3.	(a)	Design a fuzzy logic controller for inverted pendulum	CO3- U	(20)
		Or		
	(b)	Explain in detail about the methods employed for converting fuzzy form into crisp form.	CO3- U	(20)
4.	(a)	With a neat flow chart explain the operation of ANT colony optimization.	CO4- U	(20)
		Or		
	(b)	Summarize the sequential procedures involved in the cross over and reproduction phase of GA with typical examples.	CO4- U	(20)

5.	(a)	Using MATLAB Neural Network tool box discuss how will you identify and control the linear and nonlinear dynamic system	CO5- App	(20)
		Or		
	(b)	Create a neuro and fuzzy controller for its application in inverted pendulum system.	CO5- C	(20)