Name: Student University Roll No.:	Printed Pages: 01
School of Engineering Second Sessional Examination, Odd Semester (AS: 2023-24) B. Tech: CSE-AI Year: 3 Semester: 5	
Course Title: Artificial Neural Network Course Code: BAI3503	Max Marks: 60 Time: 3*hrs*

Instructions if any: Read the question Carefully.

	SECTION 'A' Q.N.1. Attempt all parts of the following:	Course Objective	Marks
a)	What is neural network ?	CO1	1
b)	What is supervised learning?	CO1	1
c)	What is gradient decent?	CO2	1
d)	What is unit step function?	CO2	1
e)	Define the free parameters of Artificial neural network.	CO3	1
f)	What is the role of ANN in pattern classification?	CO3	1
g)	Write the applications of Hopfield Model.	CO4	1
h)	What is the use of simulated Annealing?	CO4	1
	SECTION 'B' **Q.N.2. Attempt any two parts of the following:**	**Course Objective**	**Marks**
a)	Discuss the Architecture of the Multilayer perceptron Model.	CO1	6
b)	The perceptron may be used to perform numerous logic functions. Demonstrate the implementation of the binary logic functions AND and OR.	CO2	6
c)	Discuss the Adaptive Filtering.	CO3	6
d)	Discuss the Sigmoidal Activation Function.	CO4	6
	SECTION 'C'	**Course Objective**	**Marks**
Q.N.3. Attempt any two parts of the following:			
a)	Discus the XOR problem. Also suggest the proposed solutions.	CO1	5
b)	Define the virtue and limitations of back-propagation learning.	CO2	5
c)	How to represent neural network as a directed graph.	CO5	5
Q.N.4. Attempt any two parts of the following:			
a)	Discuss the Radial Basis Functions Neural Networks.	CO2	5
b)	Explain the Boltzmann machine.	CO3	5
c)	What is deep Belief Nets?	CO5	5
Q.N.5. Attempt any two parts of the following:			
a)	Explain the term cross-validation.	CO3	5
b)	What is non-linear filtering?	CO4	5
c)	Discuss the Hesian and its role in learning.	CO5	5
Q.N.6. Attempt any two parts of the following:			
a)	What do you understands by Neuro-dynamic model?	CO1	5
b)	Discuss the state and space of artificial neural model.	CO2	5
c)	Discuss is stability of equilibrium state.	CO3	5

Table 1: Mapping between COs and questions
(Number of COs may vary from course to course)

COs	Questions Numbers	Total Marks
CO1	1(a),1(b)2(a),3(a) 6(a)	18
CO2	1(c),1(d),2(b),3(b),4(a),6(b)	23
CO3	1(e),1(f),2(c),4(b),5(a),6(c)	23
CO4	1(g),1(h),2(d),5(b)	13
CO5	3(c),4(c),5(c)	15