Name: **Student University Roll No.:**		**Printed Page: 1**	
School of Engineering **Second Theory Sessional Examination** **Odd Semester (AS: 2024-25)** **B. Tech [CSE(AI)]: [Year: IIIrd] [Semester: Vth]**			
Course Title: Artificial Neural Network **Course Code: BAI3503**		**Max Marks: 30** **Time: 1 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 the purpose of backpropagation in supervised learning?	**CO3**	1
b)	Define generalization in the context of neural networks.	**CO3**	1
c)	What is the role of the Hessian matrix in backpropagation?	**CO3**	1
d)	How does cross-validation improve model performance?	**CO3**	1
e)	What is an attractor in neurodynamical models?	**CO4**	1
SECTION 'B' **Q.N.2. Attempt any two parts of the following:**		**Course Objective**	**Marks**
a)	Discuss the backpropagation algorithm in detail	**CO3**	7.5
b)	Analyze the importance of generalization in neural networks	**CO3**	7.5
c)	Explain the concept of neurodynamical systems	**CO4**	7.5
SECTION 'C' **Q.N.3. Attempt any one part of the following:**		**Course Objective**	**Marks**
a)	Explain the concept of generalization in neural networks, emphasizing its significance in supervised learning. How do techniques like cross-validation and regularization contribute to improving generalization?	**CO4**	**10**
b)	Discuss how trajectories represent the evolution of a system's state over time, providing examples of different types of attractors (fixed points, limit cycles, and chaotic attractors) and their implications in computational neuroscience.	**CO4**	**10**
	attractors and equilibrium states to perform computations, and discuss their relevance in the context of neurodynamical models and recurrent network paradigms.		

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

COs	Questions Numbers	Total Marks
CO3	1(a), 1(b), 1(c), 1(d), 2(a), 2(b), 3(a)	29
CO4	1(e), 2(c), 3(b), 3(c)	28.5

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