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Mid Semester Examination 2025

Name of the Course: M.Tech

Semester: II

Name of the Paper: Reinforcement learning

Paper Code: MCS - 253

Time: 1.5 hour

Maximum Marks: 50

Note:

- (i) Answer all the questions by choosing any one of the sub questions
- (ii) Each question carries 10 marks.
- (iii) Please specify COs against each question.

Q1	
(a)	What was the original perceptron designed to do?
(b)	Can a single perceptron solve complex problems, or are there limitations?
Q2	
(a)	What is a sigmoid neuron, and how is it different from a basic perceptron?
(b)	What is a multilayer perceptron (MLP)?
Q3	
(a)	What is the role of hidden layers in an MLP?
(b)	Explain Perceptron learning algorithm and explain each step?
Q4	
(a)	Name one historical milestone that contributed to the development of deep learning.
(b)	Compare and contrast the representational power of a single perceptron with that of a s Discuss the advantages of using sigmoid neurons in terms of differentiability and funct approximation
Q5	

(a)	What is gradient descent, and what is its purpose in training neural networks?
(b)	What does gradient descent do to the weights of a neural network?

Note For the question paper setters:

- Question paper should cover all the COs of the course.