Semester VII (B.Tech.)

Er. No. 20183[illegible]

Academic Year: 2023-24

Jaypee University of Engineering & Technology, Guna

T-2 (Odd Semester 2023)

18B14CI853 - REINFORCEMENT LEARNING

Maximum Duration: 1 Hour 30 minutes

Maximum Marks: 25

Notes:

1. This question paper has 5 questions.
2. Write relevant answers only.
3. Do not write anything on question paper.

		Marks	CO No.
Q1.	How reinforcement learning is different from supervised learning and unsupervised learning? Explain your answer with the help of an example.	[05]	CO2
Q2.	Described four main sub-elements of reinforcement learning with the help of an adaptive controller adjusts parameters of a petroleum refinery's operation in real time.	[05]	CO3
Q3.	Explain k-armed bandit problem with a set of 2000 randomly generated with k = 10. Also show it's reward distribution testbed.	[05]	CO4
Q4.	Devise three example tasks of your own that fit into the MDP framework, identifying for each it's states, actions, and rewards. Make the three examples as different from each other as possible. The framework is abstract and flexible and can be applied in many different ways. Stretch its limits in some way in at least one of your examples.	[05]	CO5
Q5.	The objective of pole-balancing task is to apply forces to a cart moving along a track so as to keep a pole hinged to the cart from falling over. Suppose you treated pole-balancing as an episodic task but also used discounting, with all rewards zero except for -1 upon failure. What then would the return be at each time? How does this return differ from that in the discounted, continuing formulation of this task?	[05]	CO5