Roll No:.....

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- March 2023

M.Tech. CSE/IT 2nd Semester

COURSE CODE: 22M1WCI235 MAX. MARKS: 15

COURSE NAME: REINFORCEMENT LEARNING

COURSE CREDITS: 03 MAX. TIME: 1Hr

COURSE COORRDINATOR: Prof. (Dr.) Vivek Kumar Sehgal

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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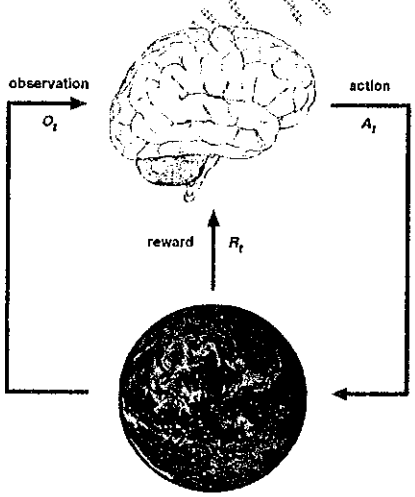
1. (a) What makes reinforcement learning deferent from other machine learning paradigms? Explain with example. CO- 1 [2.5]

   (b) What is the role of agent and environment at time t, and t+1? How the state is a function of history? CO- 1 [2.5]



2. Explain the followings for Reinforcement Learning:
   - Environment State.
   - Agent State
   - Information State

$$\mathbb{P}[S_{t+1} \mid S_t] = \mathbb{P}[S_{t+1} \mid S_1, \ldots, S_t]$$

   - Fully Observable Environments
   - Partially Observable Environments.

CO- 1 [5]

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3. Calculate the Probability State Transition Matrix for following Markov Chain with its observing state CO- 2 [5]