Priyadarshini Bhagwati College of Engineering Nagpur

Department of Computer Science and Engineering Nagpur

Class :- VIII Sem **Subject: - Reinforcement Learning (Elective -VI)**

1 What is reinforcement learning? State one practical example.

2 Explain the approaches to implement reinforcement learning.

3 Explain the elements of reinforcement learning.

4 Explain the types of reinforcement algorithm.

5 Differentiate between reinforcement learning and supervised learning.

OR

How reinforcement learning differs from other machine learning approaches.

6 Explain exploitation and exploration in reinforcement learning.

7 Discuss multi arm Bandit problem in details.

8 Explain bandit algorithm and its role in decision making.

9 Describe UCB algorithm to decide which arm to pull in multi-armed bandit scenario.

10 How does the median elimination algorithm work in bandit problem and why is it useful.

11 What is policy gradient in bandit algorithm and how dose it help the agent learn to make better decision over time.

12 Explain various application of reinforcement algorithm.

13 Explain full RL algorithm in detail.

OR

Explain some common algorithm and technique used in full reinforcement learning.

14 Why bellman optimality important for agent to learn and improve their decision-making abilities.

15 What is the Bellman Equation? How is it helpful in reinforcement learning?

OR

Discuss bellman optimality in reinforcement in detail.

16 Explain Markov Decision Process in detail.

17 Analyze the concept on policy first visit and every visit monte carlo control in reinforcement algorithm.

18 Explain the Cauchy sequence and greens equation.

19 Comparison between Policy iteration and value iteration.

20 What is dynamic programming and how does it help for agents to solve problem in reinforcement algorithm.

21 How TD(Temporal Difference) methods assist agents in learning from experiences.

22 Monte Carlo Methods for Reinforcement Learning

23 Explain the working of Q-learning in detail.

24 Explain Thompson Sampling algorithm in detail.

25 Explain least square method in reinforcement algorithm.

26 Explain Eligibility traces technique in reinforcement learning.

27 What is the use of function approximation. Explain its two types.

28 Explain following in detail

i) Fitted Q

ii) DQN (Deep Q Network)

iii) Policy gradient

29 What are core principle and component of the Deep Q Network algorithm in reinforcement learning.

30 Explain REINFORCE algorithm and challenges in implementation in REINFORCE algorithm.

31 What are the main components and principal underlying the hierarchical reinforcement algorithm.

32 Explain POMDP in detail. explain key component of POMDP.

33 What are the challenges associated with using a POMDP.

34 How can a POMDP be used to solve AI problems.

35 What is some common application of POMDPs.

Prof. D.B.Khadse

Subject Teacher