Questions
1. What is reinforcement learning? Explain how does it differ from other machine learning approaches?
2. Explain the approaches to implement reinforcement learning.
3. Give the real-world applications of reinforcement learning.
4. What is multi armed bandit problem? Explain the terms explore, exploit, regret, reward.
5. Explain bandit algorithm and its role in decision-making.
6. What is Q function in the stationary and non-stationary updates in the multi-armed bandit problem?
7. Describe UCB algorithm to decide which arm to pull in a multi-armed bandit scenario.
8. How does Median Elimination algorithm work in bandit problems, and why is it useful?
9. How does the PAC framework help to balance the trade-off between exploration and exploitation in reinforcement learning?
10. What is a policy gradient in bandit algorithms, and how does it help the agent learn to make better decisions over time?
11. How do policy gradient methods make bandit algorithms better at finding rewarding actions?
12. Explain full RL algorithm in detail.
13. How does a full reinforcement learning (RL) algorithm improve decision-making?
14. What are Markov Decision Processes (MDPs)? Describe how do they structure decision-making problems in reinforcement learning?
15. How do states, actions, and rewards come together in Markov Decision Processes to guide the learning process in reinforcement learning?
16. What is dynamic programming? How does it help agents to solve problems in reinforcement learning?
17. What's the main advantage of using temporal difference learning in reinforcement learning? How does it work?
18. How do TD (Temporal Difference) methods assist agents in learning from experiences?
19. Describe Bellman optimality in reinforcement learning.
20. Why is Bellman optimality important for agents to learn and improve their decision-making abilities?
21. What's the main goal of using least squares methods in reinforcement learning? How do they achieve it?
22. Discuss the Least Squares Methods used in reinforcement learning.
23. Write short notes on: Fitted Q DQN Policy Gradient
24. How do eligibility traces help reinforcement learning agents remember and learn

from past actions?
25.Give a brief overview of eligibility traces.
26.What is the use of Function Approximation? Explain its two types.
27.What are the advantages of Hierarchical Reinforcement Learning.
28.Describe the key components of Hierarchical Reinforcement Learning.
29.Explain POMDP.
30.Describe the key components of a POMDP in detail.