2 Marks

1. Give the definition of a rational agent.

2. What is the criteria used for the evaluation of a search strategy?

3. Compare depth first search and breadth first search.

4. State the significance of alpha beta pruning.

5. Mention the symbols used to indicate objects, relations and functions.

6. State the Bayes' rule.

7. What are the features of an ideal planner?

8. Why does uncertainty arise?

9. Define Reinforcement Learning.

10. Define Information gain.

11 Marks

11. Explain in detail the components of a well-defined problem.

12. Draw the structure of an agent and explain its role in problem solving.

13. Explain the PEAS description of the task environment.

14. Illustrate the Breadth First Search strategy with a suitable diagram.

15. Explain the min max search procedure in detail with an example.

16. You are given two jugs, 4 gallon and 3 gallon each. Neither has any measurement on it. There is a pump that can be used to fill the jug with water. How can you get exactly 2 gallons of water into the 4-gallon jug? Solve the water jug problem using Best First search.

17. Explain iterative deepening with an example.

18. Explain how alpha beta pruning reduces number of nodes in min max strategy.

19. Describe the syntax of the propositional logic.

20. List the various Resolution Strategies" and briefly explain.

21. Explain in detail the AND- Elimination rule in propositional logic.

22. Compare backward chaining and forward chaining.

23. How is knowledge represented in uncertain domains? Explain.

24. How is classical planning done efficiently? Give an example.

25. List the significance of a Bayesian network.

26. Explain in detail how inferences are extracted in a Bayesian network.

27. Discuss how ensemble learning trains multiple learners to solve the same problem.

28. List some of the applications of artificial neural networks.

29. Explain in detail inductive logic programming.

30. What is active reinforcement learning? Explain with an example.