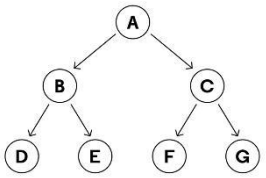
IMPORTANT QUESTIONS:

UNIT I

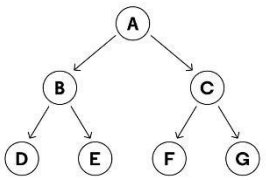
1. Explain how the AI definitions are categorized.
2. Discuss the Learning Agent structure with a diagram.
3. List out the applications of AI.
4. Explain the steps of Problem-solving Agent follows.
5. Discuss about the foundations of Artificial Intelligence.
6. Describe Nature of Environments Properties in detail.
7. Describe PEAS for the case study: automated taxi driver agent.
8. Explain the structure of model-based reflex agent with a diagram.

UNIT II

1. Explain in detail the five components in the search problem.
2. Construct path for Breadth-First Search (BFS) for the given graph and describe performance metrics.



3. Define the term Problem and Explain about well-defined problem.
4. Explain in detail the AO* algorithm and its use in problem reduction.
5. Explain the "Problem Formulation" for the 8-puzzle problem.
6. Solve the Minimax Algorithm for two-player games with an example.
7. Illustrate performance measure metrics for searching.
8. Construct path for Depth-First Search (DFS) for the given graph and describe performance metrics.



9. Build the A* algorithm and its evaluation function.
10. Construct the path using iterative deepening search strategy with an example.
11. Explain problem formulation for vacuum – cleaner world with percept–action sequence.

12. Generate game tree by using Alpha-Beta pruning for the terminal nodes 2,3,5,9,0,1,7 and 5 at Depth 3.

UNIT III

1. With an example explain the knowledge representation using semantic nets.
2. Explain Constraint satisfaction problem (CSP) and solve a Cryptarithmetic puzzle (SEND+MORE=MONEY), show the steps involved in finding solution.
3. What is knowledge representation explain various approaches to knowledge representation.
4. Explain Constraint satisfaction problem (CSP) and solve a Cryptarithmetic puzzle (BASE+BALL=GAMES), show the steps- involved in finding solution.
5. What is rule-based deduction systems explain with example.
6. Explain the concept Reasoning under uncertainty.
7. What is Dempster-Shafer theory? Explain with an example.
8. Explain Bayes' theorem. Explain with an example.
9. What are advantages of semantic networks?
10. What are a Knowledge Base and inference engine
11. What are knowledge representation issues

UNIT IV

12. Explain FOL inference rules for quantifier with example.
13. Explain the Inductive Learning with its characteristics.
14. Explain forward chaining with example
15. Explain backward chaining with example.
16. Explain unification Algorithm with an example.
17. Explain the components of general model of learning agent.
18. Explain resolution technique steps with an example.
19. Explain about Decision tree learning algorithm.
20. Define Unsupervised learning
21. Write the Decision tree Entropy (S), Gain (S, A) formulas
22. Define Conjunctive Normal Form
23. Define is supervised learning

UNIT V

24. Explain the process of knowledge acquisition and validation for expert systems.
25. Explain Expert system architecture describing its components.
26. Explain about DART Expert system in detail.
27. Explain meta knowledge with example.
28. List and explain the components of expert systems and how they work together.
29. Explain about MYCIN Expert system in detail.
30. Classify various Expert system shells and tools.
31. Explain the use of expert system shells what are the different ways to make the expert system effective.
32. What is expert system shell and write its purpose
33. What is the role of knowledge engineer
34. What is meta knowledge and write its importance
35. Why CNF is Important in Resolution? Explain with an example
36. Explain about Explanation-Based Learning with its characteristics
37. Explain about Reinforcement Learning
38. Explain Statistical Learning methods in Artificial Ingelligence
39. Explain Bayesian Learning with Example