2 Marks

1. Define the effect of heuristic accuracy on performance.

2. Give the structure of an agent in an environment.

3. Define atomic sentence and complex sentence.

4. Define the first order definite clause.

5. List the criteria to measure the performance of search strategies.

6. List the various steps in knowledge engineering process.

7. What are called as Poly Trees?

8. State Bayes rule

9. Distinguish between supervised learning and unsupervised learning.

10. Define entailment constraints.

11 Marks

11. Develop a PEAS description of the task environment for Robot Soccer Player agent.

12. Give the initial state, goal test, successor function and cost function for the following: A 3-foot tall monkey is in a room where some bananas are suspended from the 8- foot ceiling. He would like to get the bananas. The room contains two stackable, movable, climbable 3-foot-high crates.

13. Explain Alpha beta pruning on two-ply game tree. What is the problem associated with minimax search?

14. Explain why it is a good heuristic to choose the variable that is most constrained, but the value that is least constraining in a CSP search.

15. Explain how A\\* algorithm is optimal and consistent with suitable example.

16. Explain how new states are generated using Genetic Algorithm.

17. Describe the wumpus world environment with the properties of the

task environment.

18. Decide whether each of the following sentences is valid, unsatisfiable or neither. Verify the decisions using truth tables or the equivalence rules.

19. Explain Forward chaining algorithm. Trace the algorithm when it is applied to solve the crime problem.

20. Represent the following sentences in first-order logic, using a consistent vocabulary:

21. Some students took French in Even - Semester 2001. Every student who takes French passes it.

22. What are planning graphs? Write the algorithm to exact a plan directly from the planning graph. Give suitable example to highlight their use.

23. How is the Bayesian network used in representing the uncertainty about knowledge?

24. Explain the method of performing exact inference in Bayesian Networks.

25. What are the different forms of learning? Give a brief description..

26. Draw a decision tree for the problem of deciding whether to move forward at a road intersection, given that the light has just turned green.

27. Explain in detail to show how maximum likelihood solutions can be found using EM algorithm, when some variables are hidden.