# Operating System

2 Marks

1. Compare depth first search and breadth first search.  
2. State the significance of alpha beta pruning.  
3. Express "every house is a physical object" in first order logic.  
4. Define the first order definite clause.  
5. List the criteria to measure the performance of search strategies.  
6. Compare passive and active reinforcement learning.  
7. Distinguish between supervised learning and unsupervised learning.  
8. Define reinforcement learning.  
9. List the various forms of learning.  
10. Define atomic sentence and complex sentence.  
11. Define the effect of heuristic accuracy on performance.  
12. Compare forward chaining and backward chaining.  
13. List the various steps in knowledge engineering process.  
14. Mention the symbols used to indicate objects, relations and functions.  
15. State the bayes' rule.

11 Marks

1. Explain the min max search procedure in detail with an example.  
2. What is active reinforcement learning? explain with an example.  
3. Explain how alpha beta pruning reduces number of nodes in min max strategy.  
4. Explain in detail inductive logic programming.  
5. How is knowledge represented in uncertain domains? explain.  
6. Draw the structure of an agent and explain its role in problem solving.  
7. Explain iterative deepening with an example.  
8. How is classical planning done efficiently? give an example.  
9. List the significance of a bayesian network. explain in detail how inferences are extracted in a bayesian network.  
10. Explain forward chaining algorithm. trace the algorithm when it is applied to solve the crime problem.  
11. Discuss how ensemble learning trains multiple learners to solve the same problem.  
12. What are planning graphs? write the algorithm to exact a plan directly from the planning graph. give suitable example to highlight their use.  
13. Decide whether each of the following sentences is valid, unsatisfiable or neither. verify the decisions using truth tables or the equivalence rules.  
14. List some of the applications of artificial neural networks.  
15. Explain alpha beta pruning on two-ply game tree. what is the problem associated with minimax search?  
16. Explain in detail to show how maximum likelihood solutions can be found using em algorithm, when some variables are hidden.  
17. Explain in detail the types of uninformed search strategies in detail.  
18. What are agents? how do agents perceive environments? explain.  
19. Explain in detail the and- elimination rule in propositional logic.  
20. Explain how a\\* algorithm is optimal and consistent with suitable example.  
21. Explain in detail how inferences are extracted in a bayesian network.  
22. Explain in detail the basic components of propositional logic.  
23. 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.  
24. Explain in detail the components of a well-defined problem.  
25. Explain how new states are generated using genetic algorithm.  
26. Explain the method of performing exact inference in bayesian networks.  
27. List the various resolution strategies" and briefly explain.