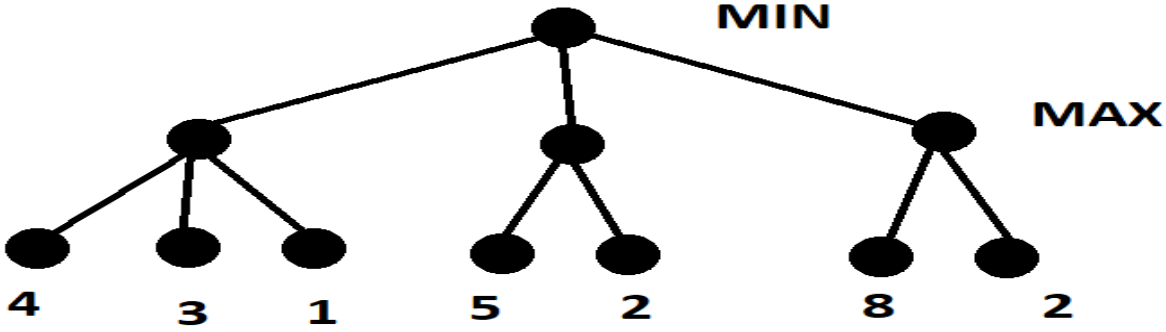
L. J Institutes of Engineering and Technology

Remedial MSE List of Questions

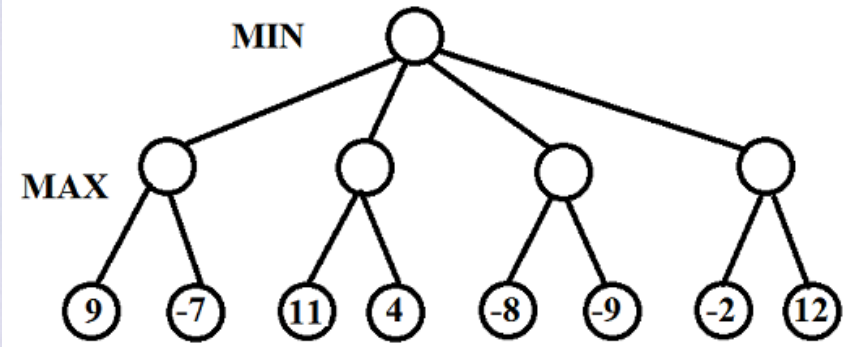
SEM: 7
Subject Name: Artificial Intelligence
Subject Code: 3170716

1.	What is AI? Define different task domains of AI.
2.	Solve water jug problem using production rule system.
3.	Explain depth first search & breadth first search with example.
4.	Discuss AI problem characteristics in detail.
5.	What is hill climbing? Explain simple hill climbing & steepest ascent hill climbing.
6.	Explain OR graph and A* algorithm in detail.
7.	Solve following crypt arithmetic problem. SEND + MORE MONEY
8.	Which are the approaches for knowledge representation are there? Explain them.
9.	Answer using resolution. "What course would Steve like?" 1. Steve only likes easy courses. 2. Science courses are hard. 3. All courses in basket weaving department are easy. 4. BK301 is a basket weaving course.
10.	Prove using backward chaining that " Ram likes peanuts". 1. Ram likes all kinds if food. 2. Orange is food. 3. Mutton is food. 4. Anything anyone eats and is not killed by is food. 5. Likex likes peanuts and is still alive. 6. Lovex likes everything which Likex likes.
11.	Explain forward and backward reasoning.
12.	Explain certainty factor in MYCIN rule based expert systems.
13.	State Baye's theorem and explain using example.
14.	Explain expert system and its architecture.
15.	How knowledge acquisition works in expert system?
16.	Which are the operators used in genetic algorithm? Explain using a flowchart.
17.	Explain min-max procedure for game playing with any example.
18.	Explain Alpha-beta cut-off procedure in game playing with example.
19.	Explain goal stack planning with suitable example.
20.	What is Natural language processing? Explain each step of NLP.
21.	Demonstrate the idea of fuzzy logic using example.
22.	Explain Artificial Neural Network.
23.	Explain perceptron learning algorithm for training neural network. What are its limitations?
24.	Consider the game tree given in Fig. 1, in which the evaluation function values are shown below each leaf node for the max player. Assume that the root node corresponds to the minimizing player. Assume that the search always visits children left-to-right.



Compute the backed-up values computed by the minimax algorithm by writing values at the appropriate nodes in the tree given. For the game tree given in fig, which nodes will not be examined by the alpha-beta pruning algorithm? Show the process of alpha-beta pruning to justify your answer.

25. We have two players: MIN who plays first and can make 4 moves, MAX who plays second and can make 2 moves. Suppose that after 1 turn, the values of the leaves are as in the figure



Compute (with the algorithm minimax) the value of the root of the tree, than say which is the most convenient move for MIN. Then tell with the reason, which parts of the tree are not generated if we perform an alpha-beta pruning.