Masud sir part - Chapter-3

1. Prove that uniform-cost search and breath-first search with constant spet are optimal when used with graph search algorithm. III

2. Compare the four evaluation criteria set of several uninformed search stratigies. III

3. What is the heuristic function of an informed search strategy III

4. How to minimize the total estimated solution cost using the best first search, A* search algorithm. III

5. Show the heuristic must be admissible and consistent for the optimal solution of A* search algorithm III

6. What is an uninformed search? II

7. Compare DFS and BFS.

8. Show that 8-puzzle are devided into two disjoint set, such that no state in one set can be transfered into a state in other set by any number of moves I

9. Show a step space with constant step cost in which graph search using iterative ~~deepingd~~ deepening find a sub-optimal solution. II

10. How to evaluate the algorithms ~~for~~ performance?

11. Write the advantage of informed search.

12. How to make huriestic function?

13. Analyse BFS technique in terms of performance measure. Provide reason to measure.

14. Compare IDS and BFS in terms of performance. Which one preferred when the search space is large and the depth of the solution is unknown. Explain with an Example.

15. Consider 8-Puzzle game ~~sea~~ scenario. figure 3.1 initial state and 3.2 goal. Which un informed technique is best? answer in ~~term~~ of performance measure.

8		6
5	4	7
2	3	1

3.1

	1	2
3	4	5
6	7	8

3.2

16. How does greedy best first work? show using figure. what are the properties.

17. Demonstrate how greedy best first search is incomplet. using figure.

18. Demonstrate the working principle of A* search to find a path from Oradea to Bucharest. (figure)

Chapter -4

1. Why do we use local search strategy to address optimization problems? ||
2. Demonstrate one dimentional state space landscape in which elevation corresponds to the objective-function.
3. What are the key advantage of local search algorithm?
4. What are the reason, problem of the hill climbing algorithm for stuck? How to escape this problem using simulated-annealing search ~~problems~~ algorithm. ||
5. Show how the last configuration of 4-queen on 4×4 board has fewer conflicts than first configuration using local search search strategy. In where conflicts mean there are no two queens on the same row, column or diagonal.
6. Illustrate and explain the genetic algorithm using digit strings representation of 8-queen state.

Chapter-18

1. Discribe component of neural network and discuss the similarities of neural network with human brain.
2. What does 'learning' mean refferring to neural nets?
3. Differentiate between supervised and unsupervised learning ||

~~Mahbub sir part =~~

4. Explain forword propagation and self organization.
5. How to learn decision trees using entropy and information gain?
6. What is unvariate linear regration?
7. How to minimize the loss using gradien ~~dec~~ descen for fitting linear regration?
8. Define the constraint satisfiction problem.
9. Represant the map coloring problem with constraint graph. X chapter-6
10. What is supervised learning?
11. Distinguish generalization loss and empirical loss.
12. Show the model selection using ~~color~~ error rates of ~~traing~~ training and validation data for different size decision trees.
13. What do artificial ~~ne~~ neural network means? How do the human brain work?
14. Illustraite and discribe the standard activation function.
15. How to adjust the weight of perceepation in neural network
16. What is the neccessity of k-fold cross validation technique?
17. Explain fuzzy inference system. Distinguish between neural network and digital computer.
18. Define defuzzification. Importance of neural network in AI.

19. Explain the structure of artificial neuron.

20. Why fuzzy logic is used in neural network?

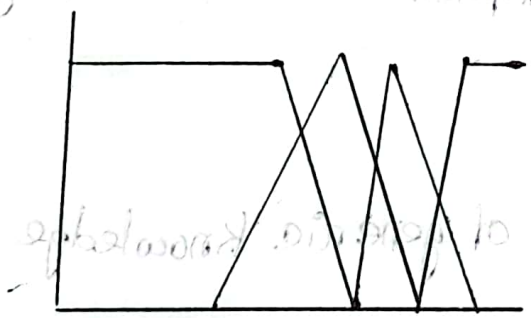
21. Distinguish between crisp set and fuzzy set.

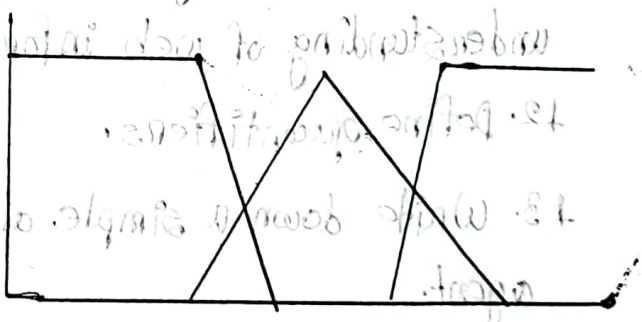
22. Explain the neural network and it's classification.

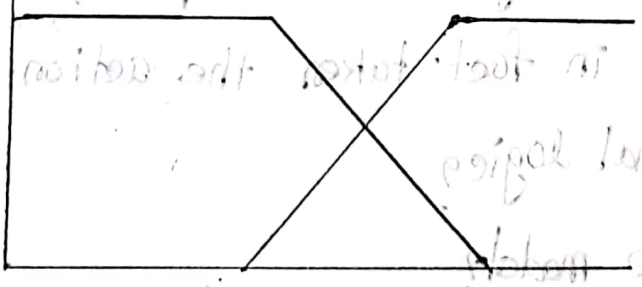
23. Explain the member function with it's feature.

24. Consider the following linguistic variables and membership ~~factor~~ functions. with respect to ~~to~~ fuzzy logic calculation the speed of driving 65% cloud cover and 37°F.

Rules	Linguistic-variable
1. If it's sunney and cold cool drive fast 2. If ~~to~~ it's overcast and freezing drive slow.	1. Temp (freezing, cool, warm, hot) 2. cloud cover (overcast, parily cloudy, sunney) 3. Speed (slow and fast)







25. What is neural network? multilayer perceptron of neural network

Mahbub sir- [Propositional logic are not here]

1. Define knowledge based agent. [Describable ques. only]
2. What does artificial intelligence mean?
3. Learning outcome of AI.
4. Define- Agent, program, rationality, autonomy, deterministic stochastic.
5. What is ~~pea~~ PEAS in specifying task environment?
6. Describe model based reflex agent.
7. Define logical agent.
8. Describe the knowledge representation of language
9. What are the characteristic of wumpus world problem?
10. What are the purposes of natural language processing with AI?
10. Describe N-gram character model.
11. How HITS Algorithm played important rule in developing our understanding of web information?
12. Define quantifiers.
13. Write down a simple algorithm of generic knowledge based agent.
14. Give a percept, the agent adds the percept to its knowledge base that it has in fact taken the action.
15. What is propositional logic?
16. What is language model?