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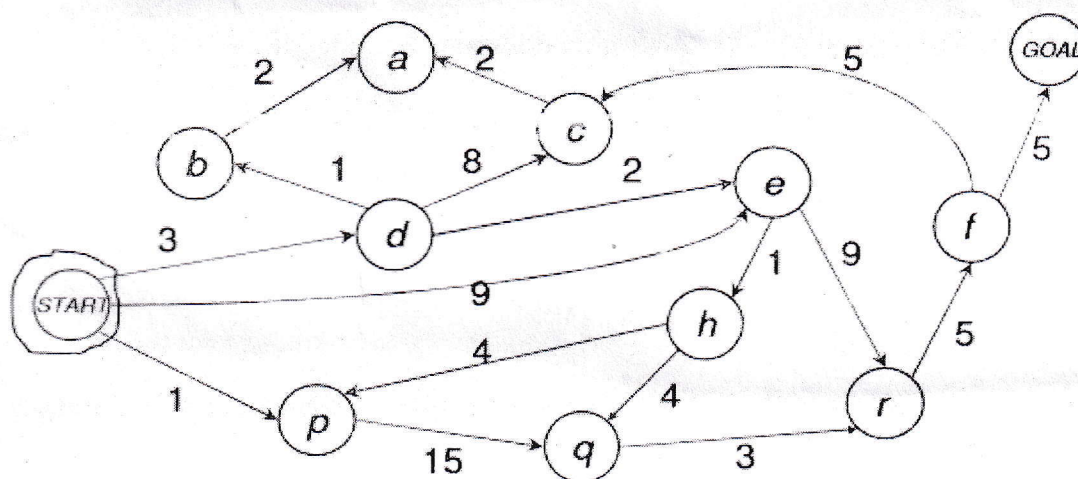
MCA DEGREE FIFTH SEMESTER EXAMINATION, JANUARY 2021
16-381-0565 ARTIFICIAL INTELLIGENCE
(Regular & Supplementary)

Time: 3 Hours

Maximum Marks: 50

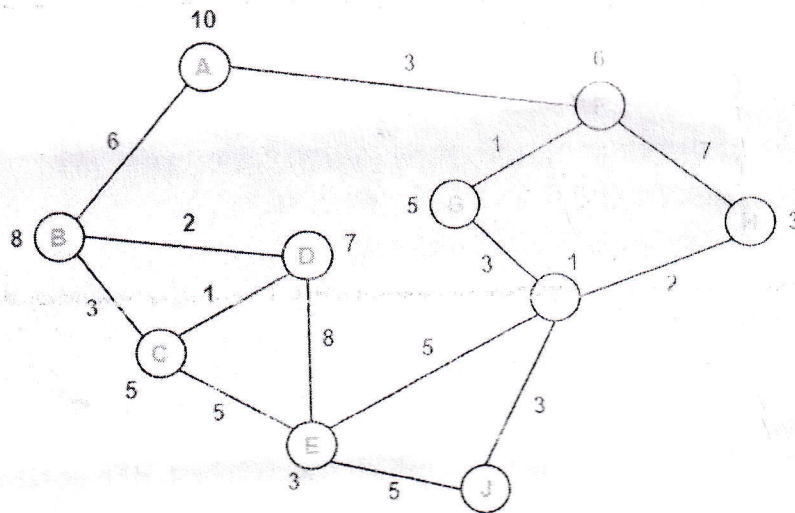
(Answer ANY FIVE questions)
 (All questions carry EQUAL marks)

1. a) For a tree which is having large branching factor, which search is best, BFS or DFS? Justify your answer. (2 marks)
- b) Find a path from Start node to goal node using Uniform Cost Search for the graph given below. (8 marks)



2. What is the advantage of using Heuristic function while searching? Find a cost-effective path to reach J from A in the following graph using A* algorithm. (Note: Edge weight is the heuristic value and vertex weight is the distance).

(10 marks)



3. Find the value of the following

- i) $X^2 + W^2 + G^2$
- ii) $WX + U(X + Y)$,

If each alphabet represent unique digit from 0-9 using the following addition (10 marks)

$$\begin{array}{r}
 W X U Y \\
 E X U X \\
 + \\
 \hline
 W F G W G
 \end{array}$$

4. What are the steps in converting a sentence in FOL to its equivalent Conjunctive Normal Forms (CNF)? Convert the following sentence to CNF:- "Everyone who loves all animals is loved by someone," (10 Marks)
5. Cargo has to be loaded from Cochin airport and has to be unloaded at Bangalore airport. From Bangalore airport another cargo is loaded and has to be unloaded at Cochin airport. Generate a plan for this problem using any planning language. Specify the initial state and goal state also. (10 Marks)
6. Explain Decision Tree with an example. (8 Marks)
Mention any method for improving the efficiency of this technique. (2 Marks)
7. Explain Minimax strategy with example. (5 Marks)
Explain any technique for improving the efficiency of Minimax strategy. (5 Marks)