Mid Semester Examination

Course Name: Artificial Intelligence   Code: CS 571/561
Marks: 10   Time: 50 minutes
Answer ALL the questions

Make reasonable assumptions as and whenever necessary. You can answer the questions in any sequence. However, the answers to all the components of any particular question should appear together. Carefully read the instructions circulated in the group on September 21, 2021.

Q1. "BFS and DFS have complimentary behaviors"

Explain this statement with proper intuition and examples.   **2**

Q2. Design a A* algorithm for the 8-puzzle problem   **5**

Specifications:

- Consider the following two heuristics: **h1**- No. misplaced tiles; and **h2**-Manhattan distance (*assume appropriate initial and goal configurations. Make sure these two are different, and have at least 2 tiles not in their intended cells*)
- Compare the performance (in terms of convergence) with the baseline case, i.e., h=0.

Q3. In propositional logic, why is "*backward chaining more effective compared to the forward chaining algorithm*". Discuss this with appropriate intuition.
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Best of Luck