9559 - exp - 5

01) Explain the Time complexity of the A* Algorithm

Ans The time complexity of the A* algorithm depends on the heuristic functions accuracy and the search space's size. In the worst-case scenario; it can be exponential. However, with an admissible and consistent heuristic, A* guarantees finding the optimal solution efficiently.

02) What are the limitations of A* algorithm?

Ans 1) Memory Usuage : A* can consume significant memory, especially in large search spaces.

2) Exponential Complexity : Worst-case time complexity can be exponential, particularly with ineffective heuristics or large search spaces.

3) Heuristic Dependency : The quality of the heuristic heavily influences A*'s efficiency and optimally.

4) Optimality Assurance : A* does not find it