9565 expt 5

Q.1 Explain the time complexity of the A* Algorithms

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

Q.2 What are the limitations of A* algorithms?

→ ① Memory Usage: 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.