

9565 A
Expt 6 Postlab

Q.1 Difference between A^* and A_0^* algorithm?

Aspect	A^* Algorithm	A_0^* Algorithm
Optimality	Guaranteed optimal solution	Not guaranteed optimal solutions
Heuristic Quality	Requires admissible heuristic	works with under estimated heuristics
Solution Quality	Always provides optimal solution	May not provide optimal solution
Explanation	Efficient guided search	Iterative refinement of estimate
Performance	more efficient with admissible heuristic	Better in scenarios with underestimated heuristic

Q.2 Why A_0^* algorithm only works heuristic values are under estm?

-
- ① In proper Heuristic handling: A_0^* may converge to suboptimal solutions, if heuristic values are overestimated.
 - ② Convergence issues: Overestimated heuristics hinder A_0^* iterative refinement process, leading to unreliable solution.
 - ③ Optimality Condition Violation: Overestimated heuristics may prevent A_0^* from terminating early, resulting in unnecessary exploration.