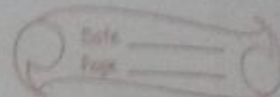


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## Viva (AI Lab test - 1)

- ① What is A\* search algorithm?
- ② Different methods used to calculate distance approximation heuristically?
- ③ What is a heuristic function?
- ④ What are agents?
- ⑤ How does an agent use sensor function?
- ⑥ Why is IDS algorithm better than other search algorithms?
- ⑦ Where are IDS, A\* implemented in real life?

### Answers:-

① A\* is an 'informed search algorithm', meaning that it is formulated in terms of weighted graphs. It is used to find the path from a given node to another, having smallest cost.

- ②
- (i) Manhattan distance
  - (ii) Diagonal distance
  - (iii) Euclidean distance
  - (iv)

③ A heuristic function is one that ranks alternatives in search algorithms to find the best one.

④ In AI, an agent is an entity which is supposed to achieve some goals in an environment, observing through sensors.

⑤ In AI, an agent uses perception of the environment (with sensor function) to make decisions about which actions to take in the future.

⑥ IDS (Iterative Deepening Search) algorithm is better than other search algorithms because of its efficiency. It has both space efficiency & fast search.

⑦ IDS & A\* search algorithms are used in real life to calculate shortest distance between two points on a map (ex:- Google Maps).