Uma

1. What is A* search algorithm?
2. What are the diff methods used to calc. distance approximation heuristically?
3. What is a heuristic functions?
4. What are agents?
5. How an agent uses sensor functions?
6. Why IDS is better than other search algorithm.
7. Where are A*, IDS are implemented in real-life?

Ans 1. A* is an informed searching algorithm. It makes use of 2 heuristic functions to find optimal cost from source to destination.

eg - 8 puzzle problem.

$= f(n) + g(n)$

heuristics

$f(n)$ - Manhattan distance

$g(n)$ - distance from goal node.

A* always provides optimal solution.

Ans 2. Different methods -

1. Manhattan distance (number of misplaced tiles)
2. Depth (Distance from source node)
3. Euclidian

Ans 3. A heuristic function, is a function that ranks alternatives in searching algorithms at each branching step so as to decide which path to follow based on given information

Ans 4. An agent in an AI machine is an independent entity whose function is to act in order to achieve a goal given.

Diff types -

1. Simple Reflex
2. Model based

Ans 5. An agent can make use of senses based on its percept from surrounding.

eg - Camera to see the surroundings
Motion sensor for speed.
Sound sensor for noise

Ans 6 IDS is better than DFS, BFS because IDS make use concept of max-depth which allows the traversal only at a till a certain depth ~~all~~ and all nodes within that depth are visited. It saves lot of memory & time by reducing space & time complexity

Ans 7 IDS - It is implemented in ~~that~~ various games such as 8-puzzle game

A* - It also provides optimal solution
eg - Finding shortest route in maps from src. to dest.