

University School of Automation and Robotics

GGG IPU, East Delhi Campus

Mid Term Examination (2023-2024) B.tech- AIDS / AIML

Paper Code: ARD 204 (4th Semester)

Subject: Introduction To AI

Time: 1:30 hrs

Max Marks: 30

Enrollement No:

Note: All questions are compulsory.

Q.No.1 Briefly explain the following:

(5X2=10 Marks)

a) Explain the concept of P-E-A-S in AI. Write down the P-E-A-S for a "Surgical Robot". [K2]

b) Differentiate between Informed & Uninformed Search with an example [K1]

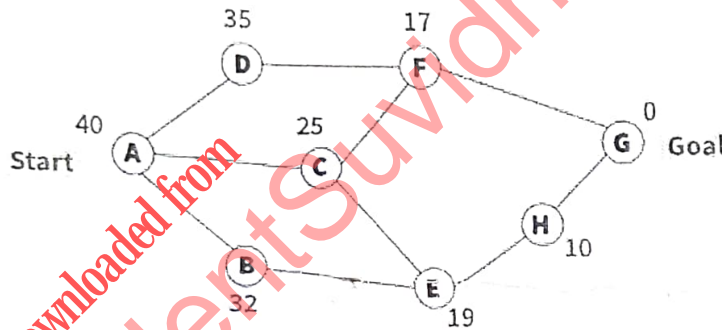
c) Consider the following situations and categorize them as Either: "Partially Observable" or "Fully Observable" or "Stochastic" Environments: [K3]

i) Self driving cars ii) Game of tic tac toe iii) Throws of a fair dice

d) What is a heuristic and what effect does it have on a search problem? Also give a real-life example of heuristic. [K2]

e) State the Three reasons when hill climbing search gets stuck. [K2]

Q.No.2 Implement the "Best First Search" algorithm & find the path from the start node to goal node in the following graph (Heuristic Values are mentioned on the nodes) (5 Marks)[K3]

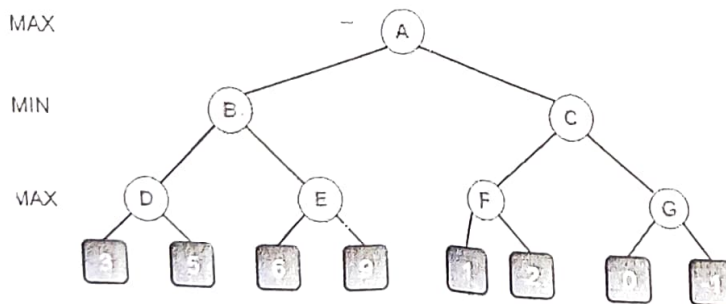


Q.No.3 Explain these four properties of AI in detail:

(5Marks)[K2]

i) Thinking rationally ii) Acting rationally iii) Thinking humanly iv) Acting humanly.

Q.No.4 Explain the concept of Mini-Max algorithm. Find the solution for the following game tree using Mini-Max Algorithm (5 Marks)[K3]



Q.No.5 Explain the following with respect to Search Algorithms:

(3+2=5 Marks)[K2]

a) Which data structures would you use for the following search algorithms:

i) Breadth first search ii) Best first search iii) Depth first search

b) Given a family tree, if one were looking for someone in the tree who is still alive, which one among DFS or BFS would be faster and why?