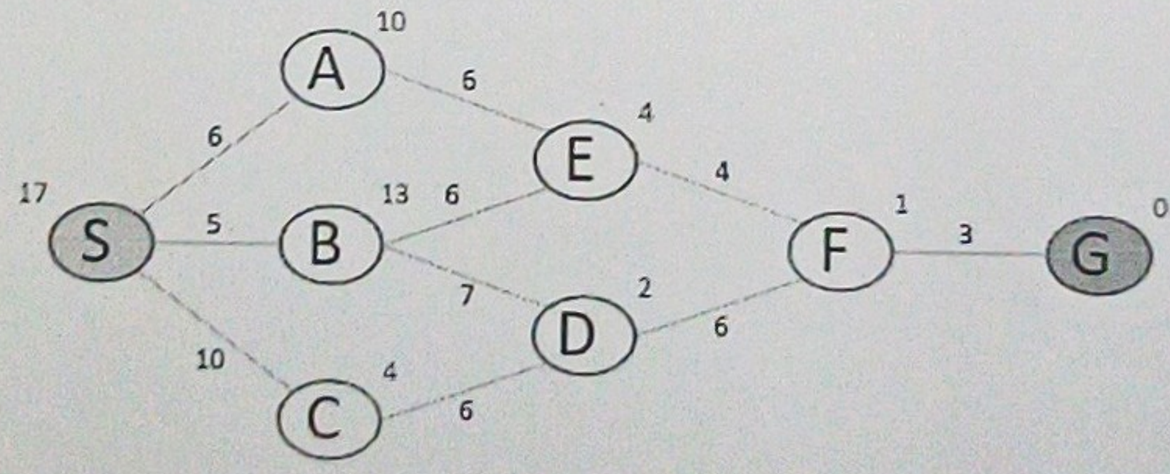
Ganpat University
U V Patel College of Engineering
B Tech Semester VI Computer Engineering/ Information Technology /Computer Engineering with Artificial Intelligence
2CEIT602: Artificial Intelligence
Assignment -1

Instruction -

The right-most text indicates the Course Outcomes (CO) Numbers, followed by Bloom's taxonomy level of the question, R: Remembering, U: Understanding, A: Applying, N: Analyzing, E: Evaluating, C: Creating.

Q-1	Explain the difference between uninformed and informed search techniques.	1-N
Q-2	Explain how the large search space leads to combinatorial explosion in Travelling salesman problem. Describe how heuristics can be used by informed search techniques to help mitigate combinatorial explosion by guiding the search process.	1-U
Q-3	Give two example heuristic functions that could guide search in the block world problem. Walk through an example demonstrating how a heuristic is used at each step of Hill Climbing search on a simple block world problem.	1-A
Q-4	Formulate the N Queens problem by defining the states, actions, and goal test. Draw a simple 4 queens search tree. Outline Python code for node and generateAllSuccessor, heuristic function, and goal testing for this problem.	2-A
Q-5	Design an intelligent agent to play Tic-Tac-Toe against a human opponent. Explain the strategy your agent should follow, such as using minimax search with alpha-beta pruning.	4-C
Q-6	Explain how a McCulloch-Pitts neuron implements Boolean functions.	3-U
Q-7	Use A* search to find the shortest path between S and G nodes in a given graph. Show the step-by-step working to demonstrate how the optimal path is found. Also, discuss Admissibility of A* Algorithm.	1-A



Notes –

1) Students are required to write the answers of all above questions.
2) Once you have completed writing the assignment in FILE PAGES, get it signed by the lecturer faculty before the deadline. Then, convert your assignment to a PDF file. This PDF must be uploaded through the Google Form link provided in the QR code to submit your work. In addition, keep your written assignment, signed by the faculty lecturer, in your Practical File for your records.
3) Last date of online submission – 15th March 2024, 03:30 pm.

28-02-24

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