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SDM Institute of Technology, Ujire

Department of CSE

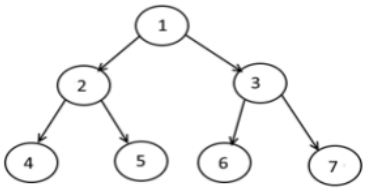
I Internal Assessment Test (October 2024)

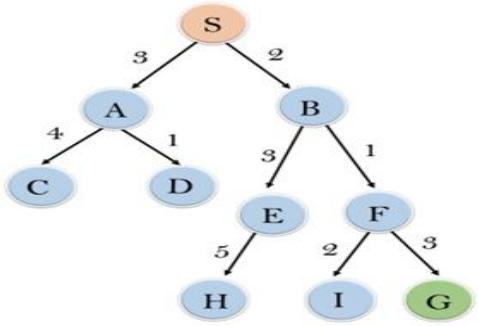
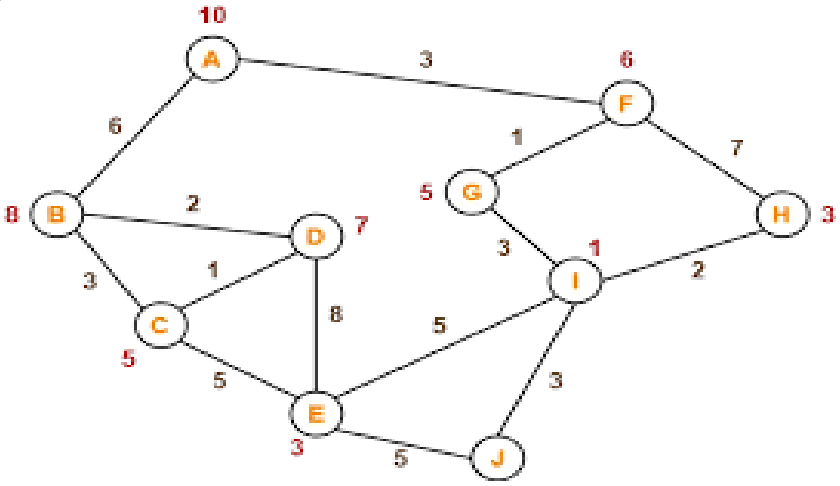
Artificial Intelligence (BCS515B)

Class: V Sem **Time: 60 minutes** **Max. Marks: 25**

Answer ONE full question from each Part.

Note: Missing data can be assumed suitably

		Marks	COs	RBT Level
	PART – A			
1a	Define Artificial Intelligence and Agent. Explain Artificial Intelligence by considering the following Characteristics: a. Human like (Thinking/Acting) b. Rationally (Thinking/Acting)	6	CO1	L2
1b	With the help of neat diagram discuss the significance of Turing Test in evaluating AI capabilities.	4	CO1	L2
	OR			
2a	What are Rational Agents? Explain PEAS. Give two Examples for Agents and their PEAS performances.	6	CO1	L2
2b	Define the structure of Agent. With a neat diagram explain Goal-based agents.	4	CO1	L2
	PART – B			
3a	Develop and demonstrate the Breadth First Search (BFS) algorithm by creating an example, and provide a detailed explanation of its implementation.	6	CO2	L3
3b	Apply the Depth First Search algorithm using a Tree traversal and LIFO queue (stack) for the following tree: 	4	CO2	L3
	OR			
4a	Construct the formulation of the following toy problems using the five components of well-defined problems: a. Vacuum World Problem b. Eight Puzzle Game	6	CO2	L3
4b	Develop a function for the following search methods: a. TREE Search b. GRAPH Search	4	CO2	L3
	PART-C			
5a	Apply the Greedy Best-First Search algorithm to the given tree, starting from node S and aiming for node G. Determine the optimal path using the	5	CO2	L3

	tree traversal along with open and closed lists throughout the search.  node | H (n) A 12 B 4 C 7 D 3 E 8 F 2 H 4 I 9 S 13 G 0			
	OR			
5b	Determine the Start and Goal nodes for the given graph, and apply the A* Search algorithm to find the optimal path from the Start node to the Goal node, using tree traversal along with open list and closed list during the process.  	5	CO2	L3

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