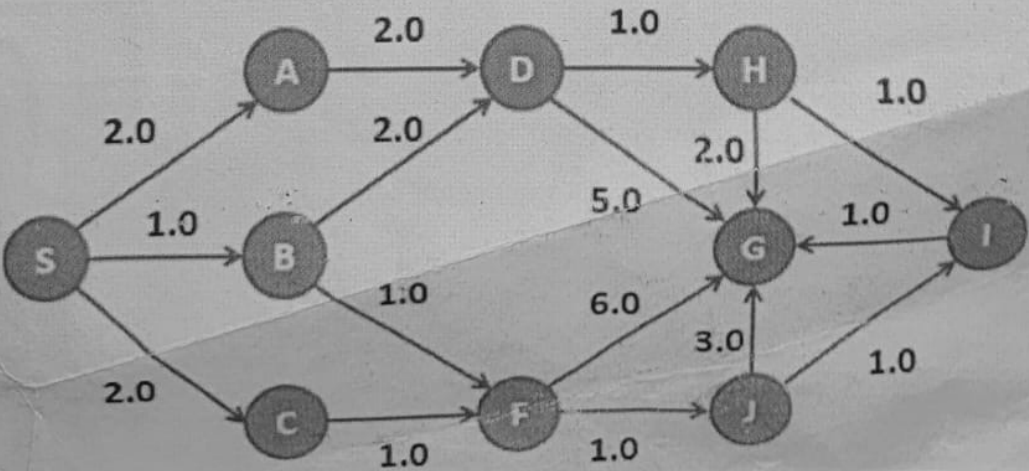# VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act. 1956)
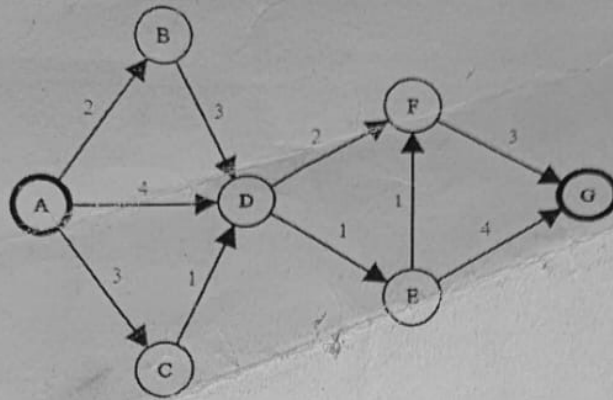
Mid Term Examination- June 2024

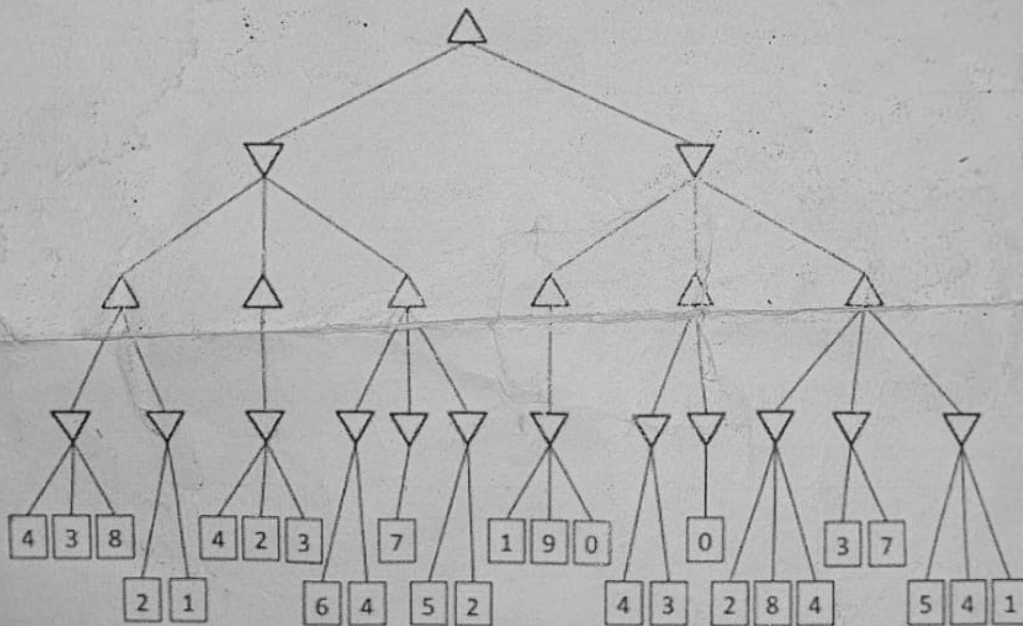| Slot	A1+A2+TA1+TA2	Semester	: Summer Semester 2023-24
Course Code	: BCSE306L	Class Number	: CH2023240700544
Course Title	: Artificial Intelligence	Faculty	: Dr.S.Abirami
Time	: 1½ Hours	Max. Marks	: 50

Answer ALL Questions

Q. No.	Question Text	Marks
1.	A tourist agent seeking to improve their business outcomes intends to create an e-tourism application for their customers. This application is supposed to leverage the travel history of their prior and present customers to forecast customer behaviour and deliver personalized travel recommendations to customers. Identify and justify the appropriate type of AI environments applicable for this application.	10
2.	In the following graph 'S' is the start state and 'G' is the goal state. With neat diagrams apply any **two** uninformed search strategies to estimate a route to reach the goal. Also, compare the strategies in terms of their complexity and justify the best one that you would choose based on the total edge distance.	10

| 3. | Consider the following directed graph, having 'A' as the starting node and 'G' as the goal node, with edge costs as mentioned, and the heuristic values (straight line distance from | 10 |

that node to the goal) for the nodes are given as - {h(A)=8, h(B)=7, h(C)=6, h(D)=5, h(E)=4, h(F)=2, h(G)=0}. Construct a tree with minimal cost and optimal solution.

| 4. | Consider the game tree shown below. Assume the root node is a max node. The numbers in the leaf nodes are the values of the different outcomes of the game to the max player. Compute the value of the game to the max player through adversarial search technique by eliminating the branches that cannot possibly influence the final decision. | 10 |

| 5. | Write the following sentences in propositional logic and deduce G from S1, S2, S3, S4, S5. | 10 |

S1 : If you study DS, then you do well in the DS exam

S2 : If you relax in DS classes, then you enjoy your third semester

S3 : You either study in DS classes or relax in DS classes, but not both

S4 : If you study DS, then you don't enjoy your third semester

S5 : If you relax in DS classes, then you don't do well in the DS exam

G : You enjoy your third semester if and only if you do not do well in the DS exam