



VIT
Vellore Institute of Technology
Vellore, Tamil Nadu, India

School of Computer Science and Engineering

Fall Semester 2024-25

CAT I

SLOT: E1

Programme Name & Branch: B.E Computer Science and Engineering / SCOPE

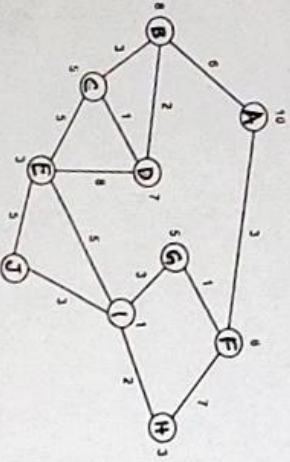
Course Name & Code: BSCE306L / Artificial Intelligence

Class Number (s): VL2024250101496

Faculty Name (s): Dr. R. Naga Priyadarshini

Exam Duration: 90 Min. Maximum Marks: 50

Q.No.	Question	Max Marks
1.	Illustrate the PEAS components and classify the environment type for the provided scenarios. a) Customer browsing an online shopping website b) Chatbot customer service c) Home automation system	10
2.	a) Consider a scenario where a bank wants to enhance its fraud detection system. Justify how AI can identify fraudulent transactions, prevent money laundering and improve risk assessment. (5 marks) b) Illustrate how the subfield of AI Expert system works and where is it typically applied? (5 marks)	10
3.	Apply A* search algorithm on the provided graph and determine the optimal path from node B to node J with the minimum total cost. Also, provide the pseudocode for the A* search algorithm as part of your solution.	10



4.	a) Enumerate classical "8-queen problem". Describe the state space for this problem and give the solution. (5 marks) b) Apply depth-first search and iterative deepening search techniques to traverse a graph, starting at node A and aiming to reach node G. (5 marks)	10
5.	A manufacturing plant aims to create an optimal production schedule that reduces production time and efficiently utilizes resources. Discuss how hill climbing could be applied to determine a feasible schedule, highlighting potential obstacles. Also, illustrate how simulated annealing can be used to overcome suboptimal solutions and achieve a better schedule.	10

