



VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

REG.NO.:

SCHOOL OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SYSTEMS
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2025-2026

SLOT: D2+TD2

Programme Name & Branch : B. Tech (IT)
Course Code and Course Name : BITE308L- Artificial Intelligence
Faculty Name(s) : Tapan Kumar Das, Hemalatha S, Valarmathi B
Class Number(s) : VL2025260103106,3110,3113
Date of Examination : 20/08/2025
Exam Duration : 90 minutes
Maximum Marks: 50

General instruction(s):

- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create)
- Course Outcomes
 1. Elucidate various Artificial Intelligence techniques and their areas of applications
 2. Solve various real-world problems using Artificial Intelligence techniques

Q. No	Question	M	CO	BL
1.	Describe the brief history of Artificial Intelligence including the latest developments.	10	1	1
2.	a) Define an agent. What is an intelligent agent? Critically evaluate the workings of five types of agents in AI. b) For each of the following activities, give a PEAS description of the task environment <i>Playing cricket, shopping for AI books on the Internet</i>	6 4	1	2
3.	Consider the following problem A farmer wants to cross a river and take with him a wolf, a goat, and a cabbage. There is a boat that can fit himself plus either the wolf, the goat, or the cabbage. If the wolf and the goat are alone on one shore, the wolf will eat the goat. If the goat and the cabbage are alone on the shore, the goat will eat the cabbage. The farmer should safely bring the wolf, the goat, and the cabbage across the river. a) Formulate the problem precisely and describe the state space of the above search problem b) Find the cost of optimal solution of the problem (consider all step costs are equal)	7 3	2	4
4.	Consider the directed graph below.		2	3



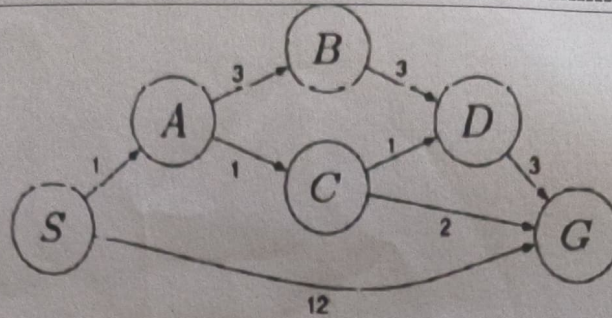
VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

REG.NO.:

SCHOOL OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SYSTEMS
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2025-2026

SLOT: D2+TD2



Node	Heuristic value
S	4
A	2
B	6
C	2
D	3
G	0

where 'S' is the start node, and 'G' is the goal node.

Which sequences of paths are explored by the following algorithms to this problem? Show the complete intermediate state space.

- Breadth-first algorithm
- Depth-first search
- Best-First search
- A* graph search

5. How Hill climbing algorithm can be utilized for solving 8-Queens problem and hence show the local maxima state for this problem. Suggest a search strategy to tackle the local maxima problem.

10

2

5
