



www.gitam.edu

GITAM (Deemed to be University)
MID Examination Question paper
UG Programmes

Programme : B.Tech. Computer Science and Engineering
Sem & AY : IV / VI / VIII & 2024 - 25
Course code & Title : CSEN2031 & Artificial intelligence
Date : 13-02-2025
Time & Duration : 120 Min

Maximum Marks: 30

Answer All Questions

Q.No.	Question	Marks	
UNIT - 1			
1	a)List and describe the different types of environments in artificial intelligence. Provide suitable examples for each.	8	BT1 /
	b) Give the general model of learning agent?	2	BT2 / CO1
OR			
2	a) Discuss the Applications of AI	8	BT1 / CO1
	b)Compare the working principles of goal-based agents and utility-based agents.	2	BT4 /
UNIT - 2			
3	a)Explain how variations of hill-climbing (like steepest ascent) help resolve local maxima issues.	8	BT1 / CO1
	b)Is heuristic function important for informed search algorithms? how	2	BT1 / CO1

OR

4 a) How does Breadth-First Search rate according to the four performance criteria? 2 BT5 /

b) Illustrate the weaknesses of the A* Search algorithm compared to other heuristic search algorithms? Find the shortest path from A to F using the A* search algorithm and compare it with a breadth-first search. Consider the following graph where each edge has a cost associated with it: A to B: cost 1 A to C: cost 4 A to D: cost 3 B to E: cost 2 C to D: cost 1 C to F: cost 5 D to F: cost 1 E to F: cost 2 Consider Heuristic Values $h(A) = 6, h(B) = 4, h(C) = 2, h(D) = 1, h(E) = 1, h(F) = 0$ 8 BT3 /

UNIT - 3

5 a) What is the significance of the evaluation function in the Minimax algorithm? 2 BT2 /

b) Prove that alpha-beta pruning takes time $O(2^{\text{power of } (m/2)})$ with optimal move ordering, where m is the maximum depth of the game tree. 8 BT5 /

OR

6 a) With the help of truth tables if symbols α , β , and γ stand for arbitrary sentences of propositional logic, prove standard logical equivalences 8 BT3 /

b) Explain unary, binary and global constraint? 2 BT2 /