PVP 23

Code: 23EC6401

II B.Tech - II Semester – Honors Examinations – APRIL 2026

ARTIFICIAL INTELLIGENCE

(HONORS in ELECTRONICS & COMMUNICATION ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

		BL	CO
1.a)	Define Artificial Intelligence.	L1	CO1
1.b)	What is the Laws of Thought approach?	L1	CO2
1.c)	Define Performance Measure.	L1	CO1
1.d)	Define an Intelligent Agent.	L1	CO2
1.e)	Define Uniform-Cost Search.	L1	CO1
1.f)	Define a Problem-Solving Agent.	L1	CO3
1.g)	What is a Heuristic Function?	L1	CO1
1.h)	Define Local Beam Search.	L1	CO3
1.i)	What are the three main components of a CSP?	L1	CO4
1.j)	What is Constraint Propagation?	L1	CO4

PART – B

			BL	CO	Max. Marks
		UNIT-I			
2	a)	Explain how the Turing Test can be used to evaluate intelligent systems.	L2	CO1	5 M
	b)	Explain the concept of Artificial Intelligence and its goals.	L2	CO1	5 M
		OR			
3		Compare the four approaches to Artificial Intelligence: • Acting Humanly • Thinking Humanly • Thinking Rationally • Acting Rationally	L2	CO2	10 M
		UNIT-II			
4	a)	Explain Agents and Environments in Artificial Intelligence.	L2	CO2	5 M
	b)	Describe the Concept of Rationality in Intelligent Agents.	L2	CO2	5 M
		OR			
5		Compare the following types of agents: • Simple Reflex Agents • Model-Based Reflex Agents • Goal-Based Agents • Utility-Based Agents	L2	CO2	10 M

UNIT-III					
6	a)	Illustrate the working of Depth-First Search with an example.	L3	CO4	5 M
	b)	Compare and contrast Iterative Deepening DFS and Breadth-First Search.	L4	CO4	5 M
OR					
7	a)	Analyze the advantages and limitations of Depth-Limited Search with an example.	L4	CO4	5 M
	b)	Demonstrate the performance measures of search algorithms (Completeness, Optimality, Time Complexity, Space Complexity).	L3	CO3	5 M
UNIT-IV					
8	a)	Explain the A* Search algorithm and its evaluation function.	L2	CO3	5 M
	b)	Compare Hill-Climbing and Simulated Annealing algorithms.	L2	CO3	5 M
OR					
9	a)	Discuss the working of a Genetic Algorithm.	L2	CO4	5 M
	b)	Compare Informed Search and Uninformed Search strategies.	L2	CO4	5 M
UNIT-V					
10	a)	Explain Constraint Satisfaction Problems (CSP) with examples.	L2	CO4	5 M

	b)	Explain the Backtracking Search algorithm for solving CSPs.	L2	CO4	5 M
		OR			
11	a)	Explain Variable Ordering and Value Ordering techniques.	L2	CO4	5 M
	b)	Compare Backtracking Search and Local Search methods in CSP.	L2	CO4	5 M