

GUJARAT TECHNOLOGICAL UNIVERSITY**B.VOC- SEMESTER-VI EXAMINATION – SUMMER 2025****Subject Code:1160501****Date:08-05-2025****Subject Name: Introduction to Artificial Intelligence****Time:10:30 AM TO 12:30 PM****Total Marks:50****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		Marks
Q.1	(a) Explain how Artificial Intelligence works also Compare Strong AI and Weak AI with examples.	05
	(b) What are the different types of Artificial Intelligence? Explain each with examples.	05
Q.2	(a) Explain History of Artificial Intelligence and Future of Artificial Intelligence .	05
	(b) Discuss the advantages and disadvantages of using AI.	05
	OR	
	(b) Explain the PEAS representation model with a suitable example. How is it useful in designing AI agents?	05
Q.3	(a) Discuss different types of AI agents with suitable examples.	05
	(b) Explain the Breadth-First Search (BFS) algorithm. Define its working principle with an example.	05
	OR	
Q.3	(a) Differentiate between Depth-First Search (DFS) and Depth-Limited Search (DLS).	05
	(b) What are informed search algorithms? Explain the search process in algorithms like A* Search.	05
Q.4	(a) What are informed search algorithms? Explain the search process in algorithms like A* Search.	05
	(b) What is the Hill Climbing algorithm? Explain its working with a real-life example.	05
	OR	
Q.4	(a) Describe State Space diagram of Hill Climbing.	05
	(b) Explain the advantages and limitations of Simple Hill Climbing algorithm.	05
Q.5	(a) Explain the concept and role of a Knowledge-Based Agent (KBA) in Artificial Intelligence.	05
	(b) Describe the architecture of a Knowledge-Based Agent.	05
	OR	
Q.5	(a) Discuss the different levels and approaches of Knowledge-Based Agents.	05
	(b) What is fuzzy logic in AI and how does it differ from classical logic?	05
