

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023****Subject Code:3145201****Date:17-07-2023****Subject Name:Introduction of Artificial Intelligence****Time:10:30 AM TO 01:00 PM****Total Marks:70****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) What is Artificial Intelligence? List task of AI.	03
	(b) Explain the production system.	04
	(c) What are the AI problem characteristics? Discuss in detail with example.	07
Q.2	(a) What is Breadth first search?	03
	(b) Explain depth first search algorithm.	04
	(c) Explain Hill climbing algorithm and state its limitations.	07
OR		
	(c) Discuss Best –First search method with example.	07
Q.3	(a) What is Brute Force?	03
	(b) What is heuristic search? Discuss with an example.	04
	(c) Explain A* algorithm in detail.	07
OR		
Q.3	(a) Explain limitations of Hill Climbing algorithm.	03
	(b) Explain Recursive best first search.	04
	(c) State Water Jug problem. Give its state space representation	07
Q.4	(a) Explain local maxima, plateau, and ridge in brief	03
	(b) Differentiate declarative and procedural knowledge.	04
	(c) Explain the State space search with the use of 8 Puzzle Problem.	07
OR		
Q.4	(a) Briefly explain any one application of Natural Language Processing.	03
	(b) Describe in brief how Min-Max search procedure works.	04
	(c) Explain Forward state space planning with example.	07
Q.5	(a) Explain planning problem.	03
	(b) Explain Hierarchical Planning.	04
	(c) Show the alpha-beta cutoff in min-max algorithm by drawing suitable game tree.	07
Q.5	(a) Explain how planning is different from search procedure	03
	(b) Differentiate supervised and unsupervised learning.	04
	(c) Explain different Parsing techniques with example.	07
