

Seat No:

Enrollment No:

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech, Summer 2024-25 Examination

Semester: VI / V

Subject Code: 303105307

Subject Name: Artificial Intelligence

Date: 19-04-2025

Time: 2.00 pm to 4.30 pm

Total Marks: 60

Instructions:

1. This question paper comprises of two sections. Write answer of both the sections in separate answer books.
2. From Section A, **Q.1** is compulsory, From Section B, **Q.1** is compulsory.
3. Figures to the right indicate full marks
4. Draw neat and clean drawings & Make suitable assumptions wherever necessary.
5. Start new question on new page.
6. BT- Blooms Taxonomy Levels – Remember-1, Understand -2, Apply-3, Analyse-4, Evaluate-5, Create-6

SECTION - A

Q.1	Answer the following questions.	Marks	CO	BT
	A. (A) Define ISA hierarchy. (B) List the advantages of using ISA hierarchy in AI. (C) Explain its application in natural language processing.	06	CO3	BT1
	B. (A) Define knowledge representation. (B) List its components. (C) Explain its role in AI problem-solving.	06	CO1	BT5
Q.2	A. Define knowledge representation using frames and explain its role.	04	CO1	BT1
	B. Explain the role of Forward and Backward inference rules in non-monotonic reasoning systems.	05	CO1	BT2
	OR			
	B. Justify the need for Statistical Reasoning in AI.	05	CO1	BT5
Q.3	A. State the main advantages of Depth-First Search in solving search problems.	04	CO4	BT1
	B. Define fuzzy set and explain its properties.	05	CO1	BT2
	OR			
	B. State the various operations on fuzzy sets.	05	CO2	BT1

SECTION - B

Q.1	Answer the following questions.	Marks	CO	BT
	A. (A) Discuss the history of AI. (B) Identify key milestones in AI development. (C) Justify the significance of AI's early history in shaping today's AI.	06	CO1	BT2
	B. (A) State the role of Isa relationships in knowledge representation. (B) Define the role of Instance relationships. (C) Justify how they impact knowledge sharing.	06	CO4	BT2
Q.2	A. Justify the significance of agent architectures in AI problem-solving.	04	CO1	BT1
	B. State and explain the future scope of AI in the field of medicine.	05	CO3	BT1

	OR			
	B. Define neural network training and explain the difference between batch and online training.	05	CO4	BT2
Q.3	A. Define an AI problem and explain its types with examples.	04	CO4	BT1
	B. Define lexical semantics and explain its role in word sense disambiguation.	05	CO4	BT2
	OR			
	B. List the steps involved in syntactic processing of natural language.	05	CO2	BT1