

Code No: R22A6604

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Regular Examinations, April 2025**Knowledge Representation and Reasoning**

(CSE-AIML, CSE-DS & B.Tech-AIML)

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Time: 3 hours**Max. Marks: 60****Note:** This question paper contains two parts A and B

Part A is compulsory which carries 10 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

<u>PART-A (10 Marks)</u>			BCLL	CO(s)	Marks
<u>(Write all answers of this part at one place)</u>					
1	A	Define Knowledge representation and reasoning.	L1	CO-I	[1M]
	B	List the basic operations used in Boolean algebra.	L1	CO-I	[1M]
	C	Define Ontology.	L1	CO-II	[1M]
	D	Provide examples of first-order and second-order emotions.	L2	CO-II	[1M]
	E	Define a Frame.	L1	CO-III	[1M]
	F	Define Knowledge representation.	L1	CO-III	[1M]
	G	What is Encapsulating objects in contexts?	L2	CO-IV	[1M]
	H	Define a Process.	L1	CO-IV	[1M]
	I	What is knowledge soup?	L1	CO-V	[1M]
	J	Define Vagueness.	L1	CO-V	[1M]
<u>PART-B (50 Marks)</u>					
<u>SECTION-I</u>					
2	A	What is the role of logic in knowledge representation?	L1	CO-I	[5M]
	B	Explain first-order logic with examples.	L2	CO-I	[5M]
OR					
3	A	Explain the Key Features of a Good Logic System.	L2	CO-I	[5M]
	B	Explain knowledge-based system with example.	L2	CO-I	[5M]
<u>SECTION-II</u>					
4	A	Discuss the general framework, and key challenges of ontology.	L3	CO-II	[5M]
	B	Describe in detail the different categories in ontology.	L3	CO-II	[5M]
OR					
5	A	Provide a detailed explanation of the philosophical ideas that have influenced modern knowledge representation.	L4	CO-II	[5M]
	B	How are space and time represented in ontology? Provide an example.	L2	CO-II	[5M]
<u>SECTION-III</u>					
6	A	Describe the fundamental principles of knowledge	L3	CO-III	[5M]

		representation.			
	B	Explain how frames are used to represent hierarchies and inheritance.	L2	CO-III	[5M]
		OR			
7	A	Explain the structure of frames used in knowledge representation.	L2	CO-III	[5M]
	B	Explain the five levels of knowledge representation with examples.	L2	CO-III	[5M]
		<u>SECTION-IV</u>			
8	A	Explain the different types of processes and illustrate them with examples.	L2	CO-IV	[5M]
	B	Define a procedure? Describe its key characteristics.	L3	CO-IV	[5M]
		OR			
9	A	Explain the concept of first-order reasoning in contexts with examples.	L2	CO-IV	[5M]
	B	Explain the concept of encapsulating objects in different contexts.	L2	CO-IV	[5M]
		<u>SECTION-V</u>			
10	A	Explain the key characteristics of vagueness.	L2	CO-V	[5M]
	B	Explain the fuzzy logic in Knowledge Representation and Reasoning (KRR).	L2	CO-V	[5M]
		OR			
11	A	Describe the different types of uncertainty in Knowledge Representation and Reasoning.	L3	CO-V	[5M]
	B	Explain the role of each component in a conceptual schema	L2	CO-V	[5M]
