Course Code: 23AD5T01

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

III - B.Tech I-Semester Regular Examinations (BR23), November - 2025

ARTIFICIAL INTELLIGENCE (CSE-AI&DS)

Time: 3 hours Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the question in Part-A and Part-B

PART–A (10X2 = 20M)

		Marks	CO	BL
1. a)	Explain any 4 AI applications?	(2M)	CO1	BL1
b)	What are the current trends in AI.	(2M)	CO1	BL1
c)	What are the 3 axioms in the axiomatic system?	(2M)	CO2	BL1
d)	What is meant by validity of a formula in logic?	(2M)	CO2	BL1
e)	What is a semantic network?	(2M)	CO3	BL1
f)	Define knowledge representation	(2M)	CO3	BL2
g)	What is a Bayesian Belief Network?	(2M)	CO4	BL1
h)	Define certainty factor.	(2M)	CO4	BL1
i)	Define a fuzzy set.	(2M)	CO5	BL1
j)	Define multi-valued logic.	(2M)	CO5	BL1

PART–B (5X10 = 50M)

2.	Explain A* search algorithm with suitable example.	10(M)	CO1	BL2
	(OR)			
3.	Explain the Iterative-deepening A* with suitable example	10(M)	CO1	BL2

4.	Describe the natural deduction system with rules and Apply these rules for an example.	10(M)	CO2	BL3
	(OR)			
5.	Explain the rules of semantic tableau system in proportional logic and Construct the semantic tableau for $(A \wedge \neg B) \wedge (\neg B \rightarrow C)$.	10(M)	CO2	BL3

6a.	Explain the approaches to knowledge representation?	5(M)	CO3	BL2
b.	Explain the knowledge representation using Frames?	5(M)	CO3	BL2
	(OR)			
7	Explain cycle theory with an example.	10(M)	CO3	BL2

8.	With an example, explain Bayesian Belief Networks.	10(M)	CO4	BL2
	(OR)			

9.	Explain Dempster-Shafer theory of evidence with suitable example.	10(M)	CO4	BL2

10	Explain fuzzy propositions and inference rules for fuzzy propositions.	10(M)	CO5	BL2
	(OR)			
11.	Discuss the working of fuzzy systems with applications.	10(M)	CO5	BL2

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Vijayakumari

Head of the Dept.
Department of CSE - AI & DS
BVCITS - Amalapuram.