Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 50002

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2025
Fifth Semester
Computer Science and Engineering
U19CS519 - ARTIFICIAL INTELLIGENCE
(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Define production system and list its major components.	2	K1	CO1
2.	Differentiate between hill climbing and breadth-first search.	2	K2	CO1
3.	State the role of predicate logic in knowledge representation.	2	K1	CO2
4.	Compare predicate calculus with other logic forms in knowledge representation.	2	K2	CO2
5.	Describe the main features of a frame-based system.	2	K1	CO3
6.	Differentiate between Bayesian Network and Dempster-Shafer theory.	2	K2	CO3
7.	Define STRIPS and mention its purpose in plan generation.	2	K1	CO4
8.	Explain the role of reinforcement learning in AI.	2	K2	CO4
9.	List the main components of expert system architecture.	2	K1	CO5
10.	Differentiate between MYCIN and XCON expert systems.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Explain the components and working of a production system in problem solving, and discuss the role of control strategies in guiding search.	13	K2	CO1

(OR)

	b)	Compare and analyze hill climbing, depth-first, and breadth-first search strategies with respect to problem characteristics, and evaluate their performance in constraint satisfaction problems.	13	K2	CO1
12.	a)	Illustrate how predicate logic is used in knowledge representation and explain its importance in AI problem solving.	13	K3	CO2
		(OR)			
	b)	Analyze the role of resolution in predicate calculus and compare structured knowledge representation methods with other logic-based approaches.	13	K3	CO2
13.	a)	Explain the architecture and working of frame-based systems and discuss inference techniques like backward and forward chaining in expert systems.	13	K3	CO3
		(OR)			
	b)	Compare fuzzy reasoning, Bayesian networks, and Dempster-Shafer theory in handling uncertainty in knowledge representation.	13	K3	CO3
14.	a)	Describe the STRIPS representation and explain the enhancements introduced by K STRIPS in advanced plan generation systems.	13	K3	CO4
		(OR)			
	b)	Analyze the role of reinforcement learning in AI and compare it with statistical learning in terms of approach and application.	13	K3	CO4
15.	a)	Explain the architecture of expert systems and discuss the role of meta knowledge and heuristics in knowledge acquisition.	13	K4	CO5
		(OR)			
	b)	Compare the functionalities of MYCIN, DART, and XCON expert systems, and evaluate the advantages of using expert system shells.	13	K4	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Discuss the role of expert systems. Explain how a typical expert system is made with examples.	15	K2	CO5
		(OR)			
	b)	Explain in detail about various learning strategies.	15	K2	CO4