U.S.N.										

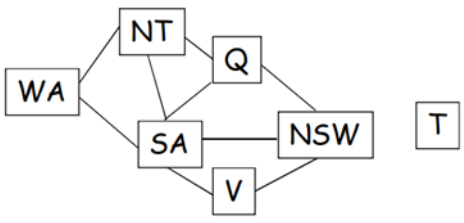
B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

August 2024 Supplementary Examinations

Programme: B.E. **Semester: VI**
Branch: Artificial Intelligence And Machine Learning **Duration: 3 hrs.**
Course Code: 22AM6PCAAI **Max Marks: 100**
Course: Advanced Artificial Intelligence

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

		UNIT - I	*CO*	*PO*	*Marks*
1	a)	Compare two play and multiplayer environment and how are they modeled using a game tree.	*CO2*	*PO2*	**05**
	b)	Differentiate full observable game and stochastic games.	*CO2*	*PO2*	**05**
	c)	Illustrate Heuristic Alpha-Beta Tree Search algorithm and justify why evaluation function is necessary for estimating the expected utility.	*CO2*	*PO2*	**10**
		UNIT - II			
2	a)	Using first order logic, represent the following sentences i. In the array A with 100 integer elements, the first 50 numbers are in increasing order and the last 50 are in decreasing order. ii. not every human is intelligent.	*CO2*	*PO1*	**05**
	b)	Illustrate various mechanism of solving constraint satisfaction problem using search.	*CO3*	*PO1*	**10**
	c)	Demonstrate explanation-based learning with an example.	*CO2*	*PO1*	**05**
		OR			
3	a)	Apply constraint satisfaction problem (CSP) technique for Job-Shop Scheduling of assembling a car.	*CO2*	*PO2*	**05**
	b)	Using Forward checking principle solve the following map coloring problem. Start state for the state WA = Red (R) domain value. 	*CO2*	*PO1*	**10**

		c)	Illustrate Inductive Logic programming.	*CO3*	*PO2*	**05**
			UNIT - III			
	4	a)	Using STRIPS Algorithm resolve the classical planning problem of block world problem.	*CO3*	*PO2*	**10**
		b)	Apply Planning Domain Definition Language (PDDL) approach for the spare tire problem.	*CO3*	*PO1*	**10**
			OR			
	5	a)	Illustrate propositional planning with a suitable example.	*CO3*	*PO2*	**06**
		b)	Illustrate Planning domain definition language (PPDL) description for Air cargo transport.	*CO2*	*PO2*	**08**
		c)	In what way schedules and resources help to solve constraint based problems effectively?	*CO3*	*PO2*	**06**
			UNIT - IV			
	6	a)	How do you handle utility functions when multiple attributes involve for decision making by AI agent?	*CO2*	*PO2*	**05**
		b)	Demonstrate value of information with an example	*CO2*	*PO1*	**07**
		c)	Provide solutions using dominance methods for Decision making in the field of public policy which involves high stakes in terms of money and Lives.	*CO1*	*PO2*	**08**
			UNIT - V			
	7	a)	Illustrate various early image processing operations performed.	*CO2*	*PO2*	**10**
		b)	Discuss the different types of robotic software architectures.	*CO2*	*PO2*	**10**

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