Code No: CT3521   **SRGEC-R20**

II B.Tech II Semester Regular Examinations
ARTIFICIAL INTELLIGENCE
(Artificial Intelligence and Data Science)

Time: 3 Hours   **Max. Marks: 70**

Note: Answer all questions. All Questions carry Equal Marks

5 × 14 = 70M

Unit - I

		BL
1.	a) Formulate (i) Toy problem (ii) 8-puzzle problem. (7M) b) Analyze any two real world problems. (7M)	L3
	(OR)	
2.	Specify the state space and rules for water jug problem. Illustrate the solution steps for solving the problem. (14M)	L2

Unit - II

3.	Discuss A* algorithm, with an example of OR graph. (14M)	L3
	(OR)	
4.	a) List the pros and cons of Breadth first search and Depth first search. (6M) b) Explain the algorithm for minmax search procedure with an example. (8M)	L2

Unit - III

5.	a) Illustrate the usage of Bayes rule for combining evidence. (7M) b) Explain about Hidden markov model for describing single discrete random variable. (7M)	L2
	(OR)	
6.	Discuss the technique for filtering and prediction. (14M)	L2

Unit - IV

7.	a) Illustrate a simple 4 x 3 environment that presents the agent with a sequential decision problem. (7M) b) Explain fully observable environment with an example. (7M)	L3

	(OR)	
8.	Discuss about policy iteration algorithm for calculating an optimal policy. (14M)	L3
	Unit - V	
9.	a) Discuss about Passive reinforcement learning . (7M) b) Explain about Direct utility estimation. (7M)	L2
	(OR)	
10.	Explore the Performance of a greedy ADP agent using Active reinforcement learning. (14M)	L4