

Reg. No.:

Name :




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**TERM END EXAMINATIONS (TEE) – December 2021- January 2022**

<b>Programme</b>	<b>: B.Tech - CSE</b>	<b>Semester</b>	<b>: Fall 2020-2021</b>
<b>Course Name</b>	<b>: Fundamentals of AI and ML</b>	<b>Course Code</b>	<b>: CSA2001</b>
<b>Faculty Name</b>	<b>: Dr S Sountharajan</b>	<b>Slot / Class No</b>	<b>: A11+A12+A13/0038</b>
<b>Time</b>	<b>: 1½ hours</b>	<b>Max. Marks</b>	<b>: 50</b>

**Answer ALL the Questions**

Q. No.	Question Description	Marks
<b>PART - A ( 30 Marks)</b>		
1	(a) Explain the significance of State space search in solving an AI 8 puzzle problem.	10
	OR	
2	(b) Apply Constraint satisfaction approach to implement Map-Coloring Problem for the given diagram.	10
		
2	(a) Assume the following facts: <ul style="list-style-type: none"><li>• Raja likes all kind of food</li><li>• Orange is food</li><li>• Chicken is food</li><li>• Anyone eats anything and alive is food</li><li>• Bill eats peanuts and alive</li><li>• Peter eats everything bill eats</li></ul> Convert the above facts into clausal form and use resolution to answer the question, "Raja likes peanuts?". Using Forward and Backward chaining method.	5
	OR	

	(b)(i)	Translate the following three statements in First Order Logic, and then deduce (iii) form (i) and (ii): (i) Lord Krishna is loved by everyone who loves someone. (ii) No one loves nobody (iii) Lord Krishna is loved by everyone	6												
	(ii)	Discuss the Multi Agent system with neat diagram.	4												
3	(a)	Describe the learning process in Neural Network with suitable diagram.	10												
OR															
	(b)	Illustrate the following types of Machine Learning with suitable example. (i)Supervised Learning (ii)Unsupervised Learning (iii)Reinforcement Learning	10												
<b>PART - B (20 Marks)</b>															
4		Illustrate Hill Climbing search technique. How is it different from A* search technique?	10												
5		The values of independent variable x and dependent value y are given below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>X</th> <th>Y</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2</td> </tr> <tr> <td>1</td> <td>3</td> </tr> <tr> <td>2</td> <td>5</td> </tr> <tr> <td>3</td> <td>4</td> </tr> <tr> <td>4</td> <td>6</td> </tr> </tbody> </table> Find the least R square regression line $y=ax+b$ . Estimate the value of y when x is 10.	X	Y	0	2	1	3	2	5	3	4	4	6	10
X	Y														
0	2														
1	3														
2	5														
3	4														
4	6														
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