



**SRM Institute of Science and Technology**  
**College of Engineering and Technology**  
**School of Computing**

Mode of Exam  
**OFFLINE**  
**SET D**

**DEPARTMENT OF COMPUTING TECHNOLOGIES**

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

Academic Year: 2023-24 (EVEN)

**Test: CLAT-1**

**Date: 22<sup>nd</sup> Feb 2024**

**Course Code & Title:** 21CSC206T – Artificial Intelligence

**Duration:** 1 period

**Year & Sem:** II /4<sup>th</sup>

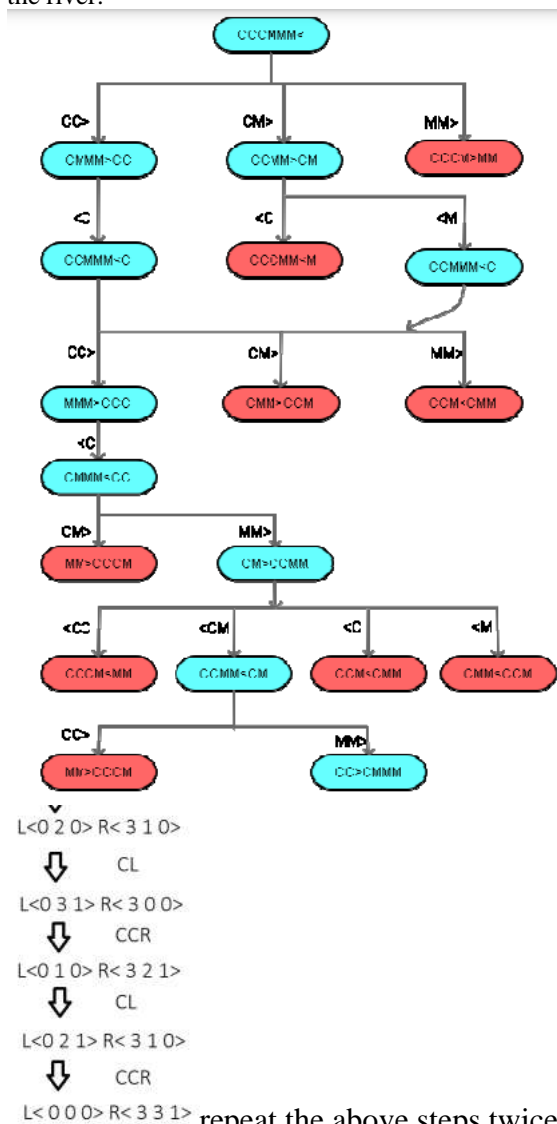
**Max. Marks:** 25

**Course Articulation Matrix:**

	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
CO4	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	3	2	3	-	-	-	-	-	2	-	-	-	-	-	-

**Part – A ( 5 x 1 = 5 Marks) Instructions: Answer ALL**

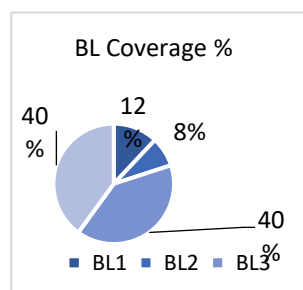
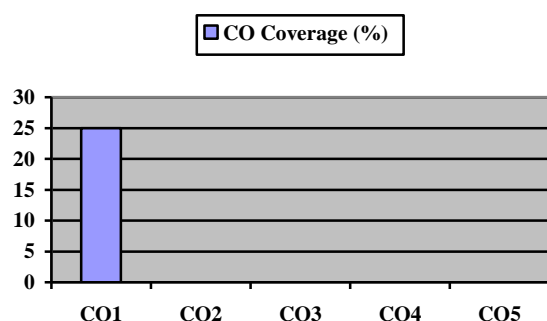
Q. No	Question	Marks	BL	CO	PO	PI Code
1	Deep blue defeated Garry Kasparov in the year----- (1997)	1	1	1	1	1.6.1
2	The solution to the----- problem is not guaranteed and may vary with different executions. (Non deterministic)	1	1	1	1	1.6.1
3	Match the following: problem criterion on left (two) among the three descriptions given on the right. 1. Utility- a) Capture maximum instances of the problem 2. Generality- b) Reasoning with efficient representation c) Good solution algorithms ( 1-c, 2-a)	1	1	1	1	1.6.1
4	Which of the following sentences are TRUE pertaining to AI hypothesis? a) <b>Weak AI Hypothesis states that the machines could act as if they were intelligent.</b> b) Weak AI Hypothesis states that for machines to act intelligently, they must also think intelligently. c) Strong AI Hypothesis states that the machines could act as if they were intelligent. d) <b>Strong AI Hypothesis states that for machines to act intelligently, they must also think intelligently.</b>	1	2	1	1	1.6.1
5	Which of the following sentence is FALSE pertaining to evolution of AI? Which is the correct chronological order of the evolution of AI based on its prominence? a) <b>Probabilistic, Neural, Logic is the chronological order of the evolution of AI</b> b) Logic, Probabilistic, Neural is the chronological order of the evolution of AI c) AlphaGo is an AI system that defeated Lee Sedol in the game of Go in the year 2016 utilizing Deep Neural Networks. d) The task of the DARPA grand challenge is Autonomous Driving.	1	2	1	1	1.6.1
<b>Part – B ( 1 x 10 = 10 Marks)</b>						
6	Consider the problem to determine number of drivers they will need or incentives to offer when drivers are in demand and associating the thumbs-up gesture with positivity. Discuss and justify the AI model employed for the above two problems. <b>Driver: decision making-statistical model and thumbs up-</b>	10	3	1	2	2.7.1

	<p><b>semiotic model</b></p> <p><b>Semiotic Models</b></p> <p>These models are based on sign processes or signification and communication. The process of carrying meaning depends on codes. Semioticians classify signs or sign systems in relation to the problem. This meaning assignment and mapping process depends on the use of codes based on individual sounds or letters that humans use to form words or movements. In computers, these signs are determined for a logical sequence.</p> <p><b>Statistical Models</b></p> <p>Statistical models refer to representation and formalisation of relationships through statistical techniques. Most of the AI problems can be represented as statistical or pattern matching problems. Various learning models from AI perspective are based on statistics. The historical data is used here in decision-making. Statistical model employs probabilistic approaches and is typically a collection of probability density functions and distribution functions.</p>					
<b>Part – C ( 1 x 10 = 10 Marks) Instructions: Answer any 1</b>						
7	<p>In the "Missionaries and Cannibals" problem, there are six missionaries and six cannibals on one side of a river. They need to cross to the other side using a boat that can carry at most three people. However, if the missionaries ever outnumber the cannibals on either side of the river, the cannibals will eat the missionaries. Determine the sequence of trips to safely transport everyone to the other side starting with one missionary and one cannibal crossing the river.</p>  <p>L&lt;0 2 0&gt; R&lt;3 1 0&gt; ↓ CL L&lt;0 3 1&gt; R&lt;3 0 0&gt; ↓ CCR L&lt;0 1 0&gt; R&lt;3 2 1&gt; ↓ CL L&lt;0 2 1&gt; R&lt;3 1 0&gt; ↓ CCR L&lt;0 0 0&gt; R&lt;3 3 1&gt; repeat the above steps twice</p>	10	3,4	1	2	2.8.1
8	<p>Scenario: Given two candles. Each of them burns for one hour. They burn unevenly in different parts though. In addition, let's have a box of matches. Your goal is to Measure 45 minutes and 15 minutes. Using the candles. List down the optimal steps.</p> <p><b>Solution:</b></p> <ul style="list-style-type: none"> <li><b>Step1: Both ends of the first candle should be lit, but only one end of the second candle should be lit. After the first candle has burned fully in 30 minutes, the</b></li> </ul>	10	3,4	1	2	2.8.1

	<p>remaining time is 30 minutes to burn the other candle with one end unburned.</p> <ul style="list-style-type: none"> <li>• <b>Step2:</b> Now lit both the ends of the 30-min(remaining) length of candle 2, it will burn in 15 minutes. Now let's have a look at the solution candle-wise. <ul style="list-style-type: none"> <li>• <b>Candle1:</b> The first candle is lit from the end, So it will be completely burned in 30 minutes.</li> <li>• <b>Candle2:</b> After 30 minutes, the two candles will be half burned. Now, let's lit the second end also and candle 2 will be burned completely in 15 minutes.</li> </ul> </li> </ul>					
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**\*Performance Indicators are available separately for Computer Science and Engineering in AICTE examination reforms policy.**

#### **Course Outcome (CO) and Bloom's level (BL) Coverage in Questions**



**Approved by the Audit Professor/Course Coordinator**