

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY (VSSUT), ODISHA			
Odd Mid Semester Examination for Academic Session 2024-25			
COURSE NAME: B.Tech		SEMESTER: 7 th	
BRANCH NAME: Information Technology			
SUBJECT NAME: Artificial Intelligence			
FULL MARKS: 30		TIME: 90 Minutes	
Answer All Questions.			
The figures in the right hand margin indicate Marks. <i>Symbols carry usual meaning.</i>			
Q1.	Answer all Questions.		[2 × 3]
a)	Differentiate between propositional logic and predicate logic.		- CO1
b)	Describe the feature of production system and their limitations.		- CO2
c)	Explain the algorithm of hill climbing search technique.		- CO3
Q2.	Consider a water jug problem: you are given two jugs, a 8 gallon one and a 6-gallon one. Neither has any measuring marker on it. There is a pump that can be used to fill the jugs with water. How can you get exactly 4 gallons of water into the 8-gallon jug? Explicit Assumptions: A jug can be filled from the pump, water can be poured out of a jug onto the ground, water can be poured from one jug to another and that there are no other measuring devices available.		[8] - CO1
	OR		
	Suggest a heuristic function and draw the next levels of the search space for the block world problem given below.		- CO1
	C B A Starting State	A B C Goal State	
Q3.	Consider the following sentences: a) If X is on top of Y, Y supports X b) If X is above Y and they are touching each other, X is on top of Y c) A cup is above a book d) A cup is touching a book i) Translate these sentences into formulas in predicate logic ii) Convert the formulas into clause form. Show that the predicate supports (book, cup) is true using resolution.		[8] - CO2
	OR		
	Consider the following sentences a) Marcus was a man. b) Marcus was a Pompeian. c) Marcus was born in 40 AD. d) All men are mortal.		- CO2

		e) All pompeians died when the volcano erupted in 70 AD. f) No mortal lives longer than 150 years. g) It is now 2025. h) Alive means not dead. i) If someone dies then he is dead all later times. ii) Translate these sentences into formulas in predicate logic iii) Convert them into clause form iv) Find "Is Marcus alive"?	
Q4.			[8]
		Draw a Conceptual Dependency structure for the following sentences. i) Bill shot Bob. ii) Since smoking can kill you, I stopped.	- CO3
		OR	
		Design a Script from Movie goer's point of view.	- CO3