

Sardar Vallabhbhai National Institute of Technology, Surat
Computer Science and Engineering Department
M.Sc-III (Mathematics) - VI Semester
Artificial Intelligence (CS308)
Practical Exam – April 2024

Date: 03/04/2024

Time: 4:00 PM to 6:00 PM

Marks:15

No	Problem Statement	Marks
1.	<p>Load the following facts into familytree.pl , consult the prolog file and answer the given questions:</p> <pre> % Program: family.pl parent(albert, jim). parent(albert, peter). parent(jim, brian). parent(john, darren). parent(peter, lee). parent(peter, sandra). parent(peter, james). parent(peter, kate). parent(peter, kyle). parent(brian, jenny). parent(irene, jim). parent(irene, peter). parent(pat, brian). parent(pat, darren). parent(amanda, jenny). % female(Person) % female(irene). female(pat). female(lee). female(sandra). female(jenny). female(amanda). female(kate). % male(Person) % male(albert). male(jim). male(peter). male(brian). male(john). male(darren). male(james). male(kyle). </pre>	[08]

	<pre> % yearOfBirth(Person, Year). % yearOfBirth(irene, 1923). yearOfBirth(pat, 1954). yearOfBirth(lee, 1970). yearOfBirth(sandra, 1973). yearOfBirth(jenny, 2004). yearOfBirth(amanda, 1979). yearOfBirth(albert, 1926). yearOfBirth(jim, 1949). yearOfBirth(peter, 1945). yearOfBirth(brian, 1974). yearOfBirth(john, 1955). yearOfBirth(darren, 1976). yearOfBirth(james, 1969). yearOfBirth(kate, 1975). yearOfBirth(kyle, 1976). </pre> <p>Use SWI – Prolog for answering the following questions (load the rules in the file familytree.pl):</p> <ol style="list-style-type: none"> 1. Is Albert a parent of Peter? 2. Who is the child of Jim? 3. Who are the parents of Brian? 4. Is Irene a grandparent of Brian? 5. Find all the grandchildren of Irene 6. List the siblings of Sandra. 7. Who is the older brother of Sandra? 8. Find the predecessors of Kyle. 9. Does Kate have a sister? 10. How many females and males are there in the knowledge base? 	
2.	<p>Implement Traveling Salesman problem for the given graph using python.</p> <pre> graph TD KC[Kansas City] --- 120 H[Houston] KC --- 80 T[Tampa] H --- 100 G[Gordon] </pre>	[07]