COLLEGE: SREE NARAYANA GURUKULAM COLLEGE OF ENGINEERING

EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, JUNE 2021

Course Code: CS464

Course Name: ARTIFICIAL INTELLIGENCE

Max. Marks: 70		Duration: 2.15 Hours

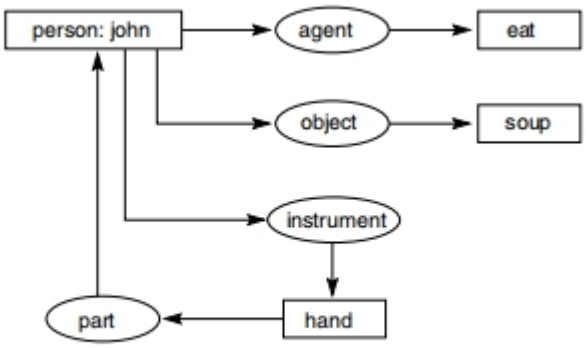
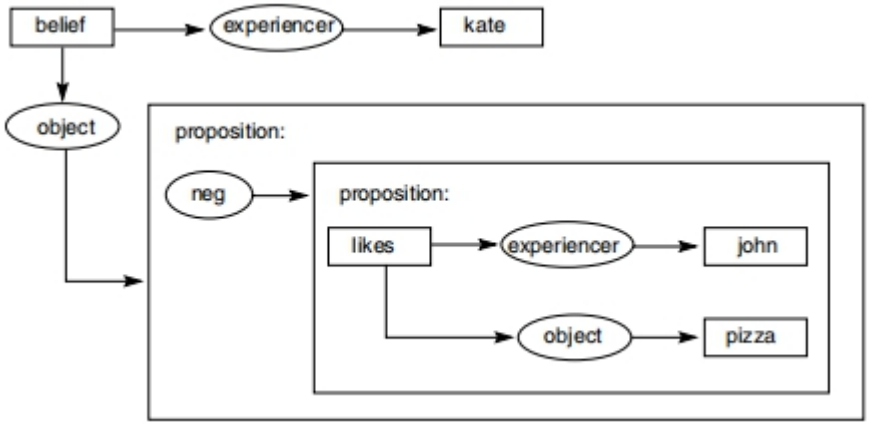
PART A

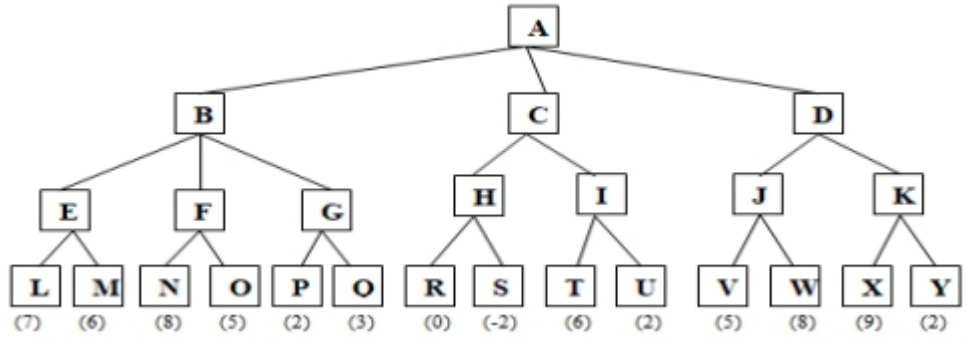
		Answer all questions, each carries 3 marks.	Marks
1		Explain the control strategies used to prepare production system	(3)
2		Illustrate the problem of under estimation and over estimation in A*	(3)
3		Is minmax procedure a depth first or depth first search procedure. Justify.	(3)
4		Explain the framework for Symbol-Based Learning	(3)
5		How can alpha beta pruning improve min max search procedure?	(3)
6		Give a case frame representation of the sentence "Sarah fixed the chair with glue"	(3)
7		With a diagram explain the components of a classifier system	(3)
8		Give any three natural language applications.	(3)
9		Differentiate expert system from knowledge base system	(3)
10		Would it be reasonable to apply Samuel's rote learning procedure to chess? Why (not)?	(3)

PART B

Answer any two full questions, each carries 6 marks.

11	a)	Discuss about Hill Climbing procedure in AI	(3)
	b)	Give an instance of the traveling salesman problem for which the nearest neighbor strategy fails to find an optimal path. Suggest another heuristic for this problem	(3)
12	a)	Which approach is better to solve a problem "I AM DECENDENT OF PAZHASSI RAJA" data driven or goal driven? Justify your answer	(2)
	b)	Solve the following crypt arithmetic problem stating all the constraints. DONALD + GERALD ---------- ROBERT	(4)
13	a)	Describe how branch and bound technique could be used to find shortest solution to	(2)

		water jug problem	
	b)	You are given a 4 litre jug and a 3 litre jug. Neither has a measuring marker in it. You have to measure exactly 2 litre of water in the 4 litre jug. Define state, state space, production rules and searching based on this problem.	(4)
PART C			
Answer any two full questions, each carries 6 marks.			
14	a)	Construct a script for going to a movie from viewpoint of the movie goer	(4)
	b)	Translate the conceptual graphs of Figure below into English sentences I)  II)  	(2)
15	a)	What is the importance of two bounds in Alpha-Beta cut-offs	(2)
	b)	Consider the following game tree in which static evaluation score are all from the players point of view: static evaluation score range is (+10 to -10). Suppose the first player is maximizing player. What nodes would not be needed to be examined using alpha beta pruning procedure?	(4)

			
16	a)	What are the properties of Agent Oriented Problem solving explain with respect to Robocup example	(4)
	b)	How does frames extend semantic networks. Explain with an example	(2)
PART D			
Answer any two full questions, each carries 8 marks.			
17	a)	The genetic algorithm is intended to support the search for genetic diversity along with the survival of important skills for a problem domain. Describe how different genetic operators can simultaneously support both these goals	(3)
	b)	Implement the candidate elimination algorithm for version spaces. Choose a concept space with several features (for example, the space of books, computers, animals etc.) Pick a concept and demonstrate learning by presenting positive and negative example of the concept	(5)
18	a)	Illustrate swap mutation, scramble mutation and inversion mutation with the help of examples	(4)
	b)	Draw the parse tree for the input 'He brought the book' using given grammar S→NP VP NP →Pronoun| Det NOMINAL NOMINAL →Noun VP→Verb |Verb NP	(4)
19	a)	Construct a trace of a transition network parse of the sentence "Dog bites"	(4)
	b)	Define the term stemming. What is the expected output when the string "She went To eat out with her friends" is stemmed?	(4)
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