Reg No.:______ Name:____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, MAY 2019

Course Code: CS464 Course Name: ARTIFICIAL INTELLIGENCE

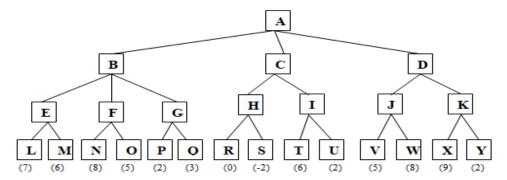
Max. Marks: 100 **Duration: 3 Hours** PART A Marks Answer all questions, each carries 4 marks. 1 Discuss the history of Artificial Intelligence. (4) 2 Define the component of 8 puzzle problem with suitable example. (4) 3 Illustrate the problem of under estimation and over estimation in A* (4) 4 List the categories for actions in conceptual dependency. (4) 5 What is a near miss situation in case of Concept Learning? (4) 6 What is the importance of two bounds in Alpha-Beta cut-offs. (4) 7 Draw the architecture of a backpropagation network and give its activation function. (4) 8 What are the three stages of genetic algorithm? (4) 9 Discuss the significance of context free grammar in natural language analysis. (4) 10 Define the term text summarization. (4) PART B Answer any two full questions, each carries 9 marks. 11 a) Explain the control strategies used to prepare production system. (4) Define the component of 8 puzzle problem with suitable example. (5) 12 a) Solve the following crypt arithmetic problem stating all the constraints. (5) EAT + THAT = APPLEb) Explain heuristic search technique with example. (4) 13 a) Determine whether goal driven or data driven search would be preferable for (4.5)solving error in a computer. State the reason also. b) Differentiate between A* algorithm and Best First Search algorithm. (4.5)PART C Answer any two full questions, each carries 9 marks.

14 a) Translate each of the following sentences into conceptual dependencies (4)

"Jane gave Tom an ice cream"

- "Basketball players are tall"
- "Panel cut down the tree with an axe"
- "Place all the ingredients in a bowl and mix thoroughly"
- b) Explain the framework for Symbol-Based Learning
- 15 a) Consider the following game tree in which static evaluation score are all from the (9) players point of view: static evaluation score range is (+10 to -10)

(5)



Suppose the first player is the maximizing player. What move should be chosen?

- 16 a) How and when heuristic is used in Minimax search technique? Illustrate the usage (4.5) of heuristic in Minimax procedure.
 - b) Design a script for ordering food in a restaurant. (4.5)

PART D

Answer any two full questions, each carries 12 marks.

- 17 a) Define mutation. Show the difference of bit flip mutation and random resetting with (6) the help of an example.
 - b) Illustrate swap mutation, scramble mutation and inversion mutation with the help of examples. (6)
- 18 a) What is the expected output when the sentence "He went to school" is given as (6) input to a POS tagger?
 - b) Write short note on probabilistic context free grammar with example. (6)
- 19 a) Elaborate on specific to general search algorithm. (6)
 - b) Define the term stemming. What is the expected output when the string "She went (6) for dancing with her sisters" is stemmed?
