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
Answer all questions, each carries 4 marks.
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)
	b)	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 = APPLE

	b)	Explain heuristic search technique with example.	(4)
13	a)	Determine whether goal driven or data driven search would be preferable for solving error in a computer. State the reason also.	(4.5)
	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   (5)

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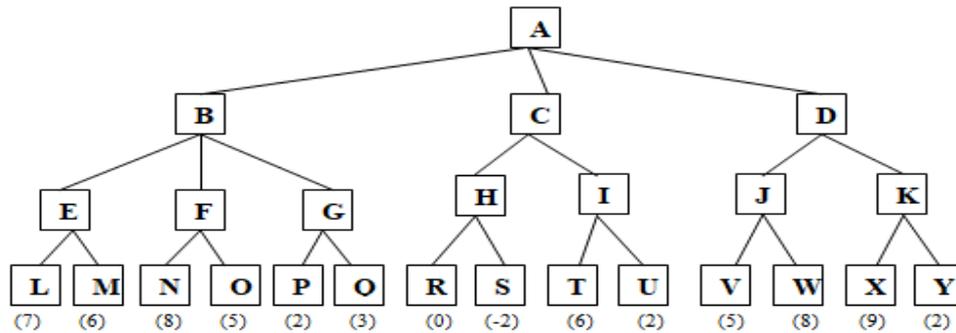
Suppose the first player is the maximizing player. What move should be chosen?

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   (6)
examples.

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?

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