Roll No. | | | | | | | | | | |

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COER University

END SEMESTER EXAMINATION, EVEN SEM 2022-23

Time : 3 hours
Program Name : MBA
Course Name : Artificial Intelligence

Total Marks : 100
Semester : IV
Course Code : SOC636

Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the time.

Q. No 1	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Investigate types of problems that can be solved using Constraint Satisfaction?	CO 1	6
(b)	Explain the basic principles of depth-first search in Artificial Intelligence problem-solving. How does it differ from breadth-first search?	CO 1	4
(c)	Describe the state space search in planning problems?	CO 1	2
(d)	Describe the Tabu Search algorithm in Artificial Intelligence. How does it use memory to guide the search process, and how does it differ from other search algorithms?	CO 1	4
(e)	Explain the concept of completeness in first-order logic.	CO 1	2

Q. No 2	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Investigate the Branch and Bound algorithm finds the optimal solution?	CO 2	6
(b)	Differentiate between uninformed search and informed search?	CO 2	4
(c)	Explain the concept of finding optimal paths in AI and provide an example of a problem that requires it.	CO 2	3
(d)	Define the different forms of learning in Artificial Intelligence?	CO 2	1
(e)	What is the role of problem decomposition in finding optimal paths in AI, and how does it relate to goal trees?	CO 2	3

Q. No 3	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Describe the principles of making simple decisions using decision trees, and provide an example of a problem that could be solved using this approach.	CO 3	3
(b)	Use the Hill Climbing search and how it works?	CO 3	3
(c)	Describe the minimax algorithm work in game playing?	CO 3	2
(d)	Describe the difference between propositional logic and first-order logic, and provide an example of a problem that could be solved using each approach.	CO 3	3
(e)	Examine the alpha-beta algorithm improve upon the minimax algorithm?	CO 3	4

Q. No 4	Attempt Any Two Parts. Each Question Carries 10 Marks.	CO	BL
(a)	Planning graphs are a powerful tool for representing and solving planning problems. Discuss the concept of a planning graph and explain how it can be used to generate efficient plans. Provide an example to illustrate your answer.	CO 4	4
(b)	Analyze the problem decomposition help in parallel computing?	CO 4	4
(c)	Compare and contrast Best First Search and A* algorithms.	CO 4	4

Q. No 5	Attempt Any Two Parts. Each Question Carries 10 Marks.	CO	BL
(a)	Explain the basic architecture of a neural network and describe the back propagation algorithm for training a neural network. Provide an example of how a neural network can be applied to a real-world problem, and discuss the advantages and limitations of using neural networks.	CO 5	2
(b)	Analyse the concept of hill climbing, and how it differs from other search algorithms.	CO 5	2
(c)	Decision trees are a popular tool for classification and regression tasks. Explain how a decision tree is constructed and how it can be used to make predictions. Discuss the advantages and limitations of using decision trees and describe how they can be combined with other machine learning techniques to improve their performance.	CO 5	2

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