

A

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code: U6C03

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2024

Sixth Semester

Computer Science and Business Systems

21UCB603-ARTIFICIAL INTELLIGENCE TECHNIQUES

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The main task of a problem-solving agent is CO1-U
 - (a) Solve the given problem and reach to goal
 - (b) To find out which sequence of action will get it to the goal state
 - (c) All of the mentioned
 - (d) None of the Above
2. The performance of an agent can be improved by ____ CO1 -U
 - (a) Learning (b) Observing
 - (c) Perceiving (d) None of the mentioned
3. What is the space complexity of Depth-first search? CO1 -U
 - (a) O(b) (b) O(bl) (c) O(m) (d) O(bm)
4. Which search uses only the linear space for searching?
 - (a) Best-first search (b) Recursive best-first search
 - (c) Depth-first search (d) None of the mentioned
5. Which of the Following problems can be modeled as CSP? CO1 -U
 - (a) 8-Puzzle problem (b) 8-Queen problem
 - (c) Map coloring problem (d) All of the mentioned
6. Flexible CSPs relax on _____ CO1 -U
 - (a) Constraints (b) Current state (c) Initial state (d) Goal state

7. What can be viewed as single literal of disjunction? CO1 -U
 (a) Multiple clause (b) Unit clause
 (c) Combine clause (d) None of the mentioned
8. Which of the following is the model used for learning? CO1 -U
 (a) Decision trees (b) Neural networks
 (c) Propositional and FOL rules (d) All of the mentioned
9. What is used in determining the nature of the learning problem? CO1 -U
 (a) Environment (b) Nature
 (c) Feedback (d) All of the mentioned
10. Inductive learning involves finding a _____ CO1 -U
 (a) Consistent Hypothesis
 (b) Inconsistent Hypothesis
 (c) Regular Hypothesis
 (d) Irregular Hypothesis

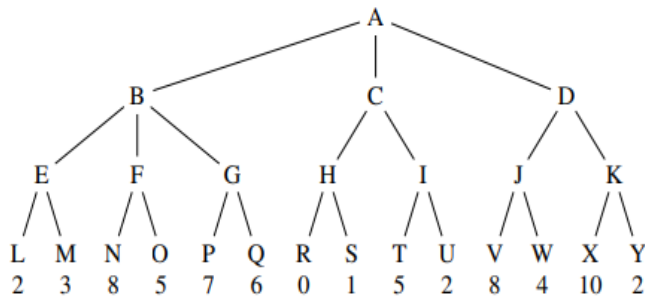
PART – B (5 x 2= 10 Marks)

11. Draw the schematic diagram of Utility based agent. CO1 -U
12. What is informed search? List the various informed search strategies. CO1 -U
13. Define Alpha beta pruning. CO1 -U
14. Define forward chaining. CO1 -U
15. Compare supervised and unsupervised learning CO1 -U

PART – C (5 x 16= 80 Marks)

16. (a) Explain the types of agent with neat diagram. CO1 -U (16)
 Or
 (b) Discuss the tic-tac-toe problem in detail and explain how it can be solved using AI techniques? CO1 -U (16)
17. (a) Explain in detail about different types of Hill climbing search. CO1 -U (16)
 Or
 (b) Compare and contrast breadth first search and Depth first search with an example. CO1 -U (16)

18. (a) Consider the following game tree is which the utility values are all from the first player's point of view. Assume that first player is the maximizing player also explain in detail about the steps involved in Mini Max algorithm. CO2-App (16)



Or

- (b) Explain crypt arithmetic problem for the below CO2-App (16)
 Problem:

SEND+MORE =MONEY

Where no two letters have the same value.

The sum of the digits must be shown in the problem

19. (a) Compare and contrast forward chaining and backward chaining in detail CO1 -U (16)

Or

- (b) Discuss in detail about various approaches in Knowledge Representation. CO1 -U (16)

20. (a) Explain in detail about Machine learning and its Life cycle. CO1 -U (16)

Or

- (b) Difference between Supervised Learning and unsupervised Learning. CO1 -U (16)

