Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U6C03

B.E. / B.Tech. DEGREE EXAMINATION, NOV 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. What is Artificial intelligence? CO1-U

   (a)Putting your intelligence into Computer

   (b)Programming with your own intelligence

   (c)Making a Machine intelligent

   (d) Playing a Game

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 heuristic function of greedy best-first search? CO1 -U

   (a) f(n) != h(n) (b) f(n) < h(n) (c) f(n) != h(n) (d) f(n) < h(n)

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. Following is/are the components of the partial order planning CO1 -U

   (a) Bindings (b) Goal (c) Current (d) Initial

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. Define hill climbing process? CO1 -U

13. Define the Structure of expert system. 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 in detail about the types of task environment CO1 -U (16)

Or

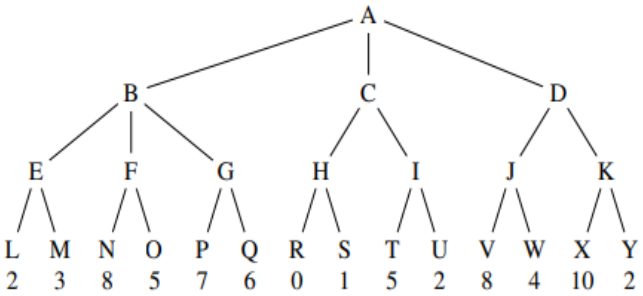
(b) Discuss in detail about agents and Environments. CO1 -U (16)

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 Problem: CO2-App (16)

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) Discuss in detail about Goal stack planning with suitable example. CO1 -U (16)

Or

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