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

Question Paper Code: 99401

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

Elective

Electronics and Communication Engineering

19UEC901- Principles of Artificial Intelligence

(Regulation 2019)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. General games involves _____ CO1- U

   (a) Single-agent (b) Multi-agent

   (c) Neither Single-agent nor Multi-agent (d) Only Single-agent and Multi-agent

2. Which of the following components of knowledge representation is used for constructing legal sentences in logic? CO1- U

   (a) Syntax (b) Semantics (c) Knowledge base (d) Information Engine

3 Which of the following search belongs to totally ordered plan search? CO1- U

   (a) Forward state-space search (b) Hill-climbing search

   (c) Depth-first search (d) Breadth-first search

4. How many terms are required for building a bayes model? CO1- U

   (a) 1 (b) 2 (c) 3 (d) 4

5. What will take place as the agent observes its interactions with the world? CO1- U

   (a) Learning (b) Hearing (c) Perceiving (d) Speech

PART – B (5 x 3= 15 Marks)

6. Define annealing and simulated annealing. CO1- U

7. Define Semantics and Syntax? CO2- U

8. Write short notes on forward state space search? CO1- U

9. Write short notes on conditional independence in Bayesian network. CO1- U

10. Explain about cross validation. CO1- U

PART – C (5 x 16= 80Marks)

11. (a) Explain the concept of Greedy best-first search with an example. CO2- App (16)

Or

(b) Discuss about iterative improvement algorithms and the two major classes such as Hill-climbing and simulated annealing CO2- App (8)

12. (a) Illustrate the inference procedure of propositional resolution using refutation in conjunctive normal for first order logic knowledge base. CO1- U (16)

Or

(b) Explain in detail about knowledge base problem using first order logic representation. CO1- U (16)

13. (a) Explain about forward (progression) state space search with appropriate diagram. CO1- U (16)

Or

(b) Explain about backward (regression) state space search with appropriate diagram. CO1- U (16)

14. (a) Describe about inference by enumeration algorithm that are often applicable when exact inference is infeasible. CO1- U (16)

Or

(b) Explain about the variable elimination algorithm and how it eliminates repeated calculations of enumeration algorithm. CO1- U (16)

15. (a) Explain about support vector machine learning approach. CO1- U (16)

Or

(b) Describe the method of maximum-likelihood parameter learning. CO1- U (16)