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Question Paper Code: 56203

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Sixth Semester

Computer Science and Engineering

15UCS603- ARTIFICIAL INTELLIGENCE

(Regulation 2015)

Duration: Three hours                                           Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1.  What is the term used for describing the judgmental or commonsense          CO1- R
    part of problem solving?

    (a) Heuristic              (b) Critical           (c) Value based           (d) Analytical

2.  What was originally called the "imitation game" by its creator?            CO2- R

    (a) LISP                   (b) The Turing test    (c) Logical theoretic     (d) Cyber metics

3.  Which kind of planning consists of successive representations of           CO3- U
    different levels of a plan?

    (a) Non-Hierarchical Planning              (b) Project Planning

    (c) Hierarchical Planning                  (d) All the above

4.  Uncertainty arises in the wumpes world because the agents sensors          CO4- R
    give only

    (a) Full and global information            (b) Partial and global information

    (c) Partial and local information          (d) Full and local information

5.  The field that investigates the mechanics of human intelligence is         CO5- R

    (a) History        (b) Cognitive Science        (c) Psychology        (d) Sociology

6.  List some metrics to measure the success of intelligence.          CO1- R

7.  Explain Dependency-Directed Back Tracking.          CO2- U

8.  With reference to planning discuss progression and regression.          CO3- U

9.  What are the steps involved in representing knowledge using first order logic.          CO4- R

10. How do you evaluate a decision network?          CO5- U

PART – C (5 x 16= 80 Marks)

11. (a)   (i) What is meant by Heuristic Search? Explain.          CO1- U          (8)

    (ii) Write A* algorithm .Explain the processing of A* algorithm          CO1- U          (8)
    with an example search tree with Heuristic values.

                    Or

    (b)   (i) What are the four basic types of agent program in any          CO1- U          (10)
    intelligent system? Explain how did you convert them into
    learning agents?

    (ii) Explain the uninformed search strategies with example of          CO1- U          (6)
    Breadth First Search and Depth Limited Search

12. (a)   Consider the following sentences:          CO2- App          (16)
    • Ram likes all kinds of food.
    • Apples are food.
    • Chicken is food.
    • Anything anyone eats and isn't killed by is food.
    • Sri eats peanuts and is still alive.
    • Saieats everything Sri eats.

    (i) Translate these sentences into formulas in predicate logic

    (ii) Prove that Ram likes peanuts using backward chaining

    (iii) Convert the formulas of a part into clause form

    (iv) Prove that Ram likes peanuts using resolution

                    Or

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| (b) | (i) Describe the Knowledge Representation and Knowledge Engineering in FOL. | CO2- U | (10) |
| | (ii) Give note on Unification and forward chaining. | CO2- U | (6) |

13. (a) (i) Is planning search totally ordered? If not, how is planning processed? How do Heuristic approach helpful in those situations?    CO3- U    (8)

(ii) How is conditional planning work? How does a replanning agent perform when encountering something unexpected?    CO3- U    (8)

Or

(b) Explain in detail about planning with state-space search and Hierarchy planning    CO3- U    (16)

14. (a) What is uncertainty? Explain the methods available for handling uncertain knowledge?    CO4- U    (16)

Or

(b) (i) How are Bayes' rule used to combine evidence in simple case?    CO4- U    (8)

(ii) Explain the Bayesian nets with continuous variable?    CO4- U    (8)

15. (a) Genetic learning and neural net learning are different compared to other learning methodologies .Discuss how do Genetic and Neural net algorithm adapt to learn and act.    CO5- U    (16)

Or

(b) Describe in detail about Artificial Neural Network and Support Vector Machine.    CO5- U    (16)

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