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Question Paper Code: 41263

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Sixth Semester

Computer Science and Engineering

14UCS603 - ARTIFICIAL INTELLIGENCE

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Which instruments are used for perceiving and acting upon the environment
 - Sensors and Actuators
 - Sensors
 - Perceiver
 - None of these
- Which is not the commonly used programming language for AI?
 - PROLOG
 - Java
 - LISP
 - Perl
- A heuristic is a way of trying
 - To discover something or an idea embedded in a program
 - To search and measure how far a node in a search tree seems to be from a goal
 - To compare two nodes in a search tree to see if one is better than the other
 - Only (a), (b) and (c)
- Which is not a type of First Order Logic (FOL) Sentence?
 - Atomic sentences
 - Complex sentences
 - Quantified sentence
 - Quality Sentence
- Which search method takes less memory?
 - Depth-First Search
 - Breadth-First search
 - Linear Search
 - Optimal search

6. Which is the best way to go for Game playing problem?
- (a) Linear approach (b) Heuristic approach
(c) Random approach (d) Optimal approach
7. A Hybrid Bayesian network contains
- (a) Both discrete and continuous variables
(b) Only Discrete variables
(c) Only Discontinuous variable
(d) Continuous variable only
8. A* algorithm is based on
- (a) Breadth-First-Search (b) Depth-First –Search
(c) Best-First-Search (d) Hill climbing
9. Inductive learning involves finding a
- (a) Consistent Hypothesis (b) Inconsistent Hypothesis
(c) Regular Hypothesis (d) Irregular Hypothesis
10. Neural Networks are complex _____ with many parameters.
- (a) Linear Functions (b) Nonlinear Functions
(c) Discrete Functions (d) Exponential Functions

PART - B (5 x 2 = 10 Marks)

11. Define artificial intelligence.
12. Define unification.
13. What are the different types of planning?
14. What is fuzzy logic? What is its use?
15. What is learning? What are its types?

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Explain the goal and model based reflex agents with example. (8)
(ii) Prove that the breadth first search is a special case of uniform cost search. (8)

Or

- (b) Explain the approach of formulation for constraint satisfaction problems with example. (16)
17. (a) (i) Write the algorithm for deciding entailment in propositional logic. (8)
(ii) Explain standard quantifiers of first order logic with example. (8)
- Or
- (b) (i) Describe forward chaining and backward chaining algorithm. (8)
(ii) Write short note on unification. (8)
18. (a) Explain the concept of planning with state space search using suitable examples. (16)
- Or
- (b) Explain the use of planning graph in providing better heuristic estimation with suitable example. (16)
19. (a) (i) State the Baye's theorem. How is it useful for decision making under uncertainty. (6)
(ii) Explain the method of performing exact inference in Bayesian networks. (10)
- Or
- (b) (i) Explain the need of fuzzy set and fuzzy logic with example. (8)
(ii) Write the working principles of hidden Markov models. (8)
20. (a) (i) Describe decision tree learning algorithm. (8)
(ii) Give the detailed notes the process of explanation based learning with example. (8)
- Or
- (b) (i) Explain in detail statistical learning methods. (8)
(ii) Discuss active and passive reinforcement learning with suitable example. (8)
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