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

Question Paper Code: 46203

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

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)

1. An agent that can take the right decision in every situation is

   (a) Local agent (b) Rational agent
   (c) Logical agent (d) Intelligent agent

2. Which instruments are used for perceiving and acting upon the environment

   (a) Sensors and Actuators (b) Sensors
   (c) Perceiver (d) None of these

3. Which mechanism is applied to use a design pattern in an OO system?

   (a) Inheritance (b) Composition
   (c) Coupling (d) None of these

4. Which is not a type of First Order Logic (FOL) Sentence?

   (a) Atomic sentences (b) Complex sentences
   (c) Quantified sentence (d) Quality Sentence

5. _____ planning checks what is actually happening in the environment at predetermined plans.

   (a) Continuous planning (b) Replanning
   (c) Multiagent planning (d) Conditional planning

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7. _____ state is a representation of the probabilities of all possible actual states of the world.

(a) Belief state (b) Consistent state
(c) Inconsistent state (d) Transition state

8. A* algorithm is based on

(a) Breadth-First-Search (b) Depth-First –Search
(c) Best-First-Search (d) Hill climbing

9. Automated vehicle is an example of

(a) Supervised learning (b) Unsupervised learning
(c) Active learning (d) Reinforcement learning

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PART - B (5 x 2 = 10 Marks)

11. What are the four components of defining a problem?

12. Write the BNF grammar of sentences in propositional logic.

13. Annotate the conditions of a mutex relation that holds between two actions at a given level?

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) Discuss the properties of task environment. (8)

(ii) Illustrate Breadth First Search with suitable example. (8)

Or

(b) Explain the approach of formulation for constraint satisfaction problems with example. (16)

17. (a) Explain the forward chaining process and efficient forward chaining with example. (16)

Or

(b) (i) Describe forward chaining and backward chaining algorithm. (8)

(ii) Write short note on unification. (8)

18. (a) Elucidate partial order planning with suitable example. (16)

Or

(b) Explain the use of planning graph in providing better heuristic estimation with suitable example. (16)

19. (a) Discuss the design issues to be solved to use HMM for real world application. (16)

Or

(b) Explain the method of performing exact inference in Bayesian networks. (10)

20. (a) (i) Explain decision tree learning machine. (8)

(ii) Discuss back propagation algorithm for learning in multilayer neural network. (8)

Or

(b) Explain the concept of Reinforcement learning. (16)

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