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

Question Paper Code: 46203

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

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. Artificial Intelligence is building systems that

   (a) Act like humans (b) Act rationally
   (c) Think like humans (d) All the above

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. A heuristic is a way of trying

   (a) To discover something or an idea embedded in a program
   (b) To search and measure how far a node in a search tree seems to be from a goal
   (c) To compare two nodes in a search tree to see if one is better than the other
   (d) Only (a), (b) and (c)

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

(a) Continuous planning (b) Replanning

(c) Multiagent planning (d) Conditional planning

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. Uncertainty arises in the wumpus world because the agent's sensors give only

(a) Full & Global information (b) Partial & Global Information

(c) Partial & local Information (d) Full & local information

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

10. Automated vehicle is an example of

(a) Supervised learning (b) Unsupervised learning

(c) Active learning (d) Reinforcement learning

PART - B (5 x 2 = 10 Marks)

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

12. Define unification.

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

14. State Bayes' rule.

15. Define reward.

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) Explain Planning and acting in non-determininstic domains. (16)

Or

(b) Explain the concept of planning with state space search using suitable examples. (16)

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

Or

(b) (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)

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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