

7. Strong Artificial Intelligence is _____

- a) the embodiment of human intellectual capabilities within a computer
- b) a set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans
- c) the study of mental faculties through the use of mental models implemented on a computer
- d) all of the mentioned

[View Answer](#)

Answer: a

Explanation: None

11. Which search method takes less memory?

- a) Depth-First Search
- b) Breadth-First search
- c) Optimal search
- d) Linear Search

[View Answer](#)

Answer: a

Explanation: Depth-First Search takes less memory since only the nodes on the current path are stored, but in Breadth First Search, all of the tree that has generated must be stored.

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 is
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: In a heuristic approach, we discover certain idea and use heuristic functions to search for a goal and predicates to compare nodes.

13. How do you represent “All dogs have tails”?

- a) $\forall x: \text{dog}(x) \rightarrow \text{tail}(x)$
- b) $\forall x: \text{dog}(x) \rightarrow \text{tail}(y)$
- c) $\forall x: \text{dog}(y) \rightarrow \text{tail}(x)$
- d) $\forall x: \text{dog}(x) \rightarrow \text{tail}(x)$

[View Answer](#)

Answer: a

Explanation: We represent the statement in mathematical logic taking ‘x’ as Dog and which has tail. We cannot represent two variable x, y for the same object Dog that has tail. The symbol “ \forall ” represent all.

2. A.M. Turing developed a technique for determining whether a computer could or could not demonstrate the artificial Intelligence, Presently, this technique is called

-
- a) Turing Test
 - b) Algorithm
 - c) Boolean Algebra
 - d) Logarithm

[View Answer](#)

Answer: a

Explanation: None.

5. Which of the following, is a component of an expert system?

- a) inference engine
- b) knowledge base
- c) user interface
- d) all of the mentioned

Answer: d

Explanation: None.

6. A computer vision technique that relies on image templates is _____

- a) edge detection
- b) binocular vision
- c) model-based vision
- d) robot vision

Answer: c

Explanation: None.

14. A process that is repeated, evaluated, and refined is called _____

- a) diagnostic
- b) descriptive
- c) interpretive
- d) iterative

[View Answer](#)

Answer: d

Explanation: None.

The performance of an agent can be improved by _____

- a) Learning
- b) Observing
- c) Perceiving
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: An agent can improve by saving the previous states on which it was earlier, hence in future it can learn to respond in the same situation better

2. External actions of the agent is selected by _____

- a) Perceive
- b) Performance
- c) Learning
- d) Actuator

[View Answer](#)

Answer: b

Explanation: It depends on how you want to improve and what the performance measures are.

3. The action of the Simple reflex agent completely depends upon _____

- a) Perception history
- b) Current perception
- c) Learning theory
- d) Utility functions

[View Answer](#)

Answer: b

Explanation: These agents select actions based on the current perception, ignoring the rest of the perception history.

4. Which of the following could be the approaches to Artificial Intelligence?

- a) Strong Artificial Intelligence
- b) Weak Artificial Intelligence
- c) Applied Artificial Intelligence
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Strong Artificial Intelligence aims to build machines that can truly reason and solve problems.

Weak Artificial Intelligence deals with the creation of some form of computer-based artificial intelligence that cannot truly reason and solve problems, but can act as if it were intelligent.

Applied Artificial Intelligence aims to produce commercially viable “smart” systems.

In the Cognitive Artificial Intelligence approach, a computer is used to test theories about how the human mind works.

2. Which term is used for describing the judgmental or commonsense part of problem solving?

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

[View Answer](#)

Answer: a

Explanation: None.

5. What is the name of the computer program that simulates the thought processes of human beings?

- a) Human logic
- b) Expert reason
- c) Expert system
- d) Personal information

[View Answer](#)

Answer: c

Explanation: None.

6. What is the name of the computer program that contains the distilled knowledge of an expert?

- a) Database management system
- b) Management information System
- c) Expert system
- d) Artificial intelligence

[View Answer](#)

Answer: c

Explanation: None.

1. What is Machine learning?

- a) The autonomous acquisition of knowledge through the use of computer programs
- b) The autonomous acquisition of knowledge through the use of manual programs
- c) The selective acquisition of knowledge through the use of computer programs
- d) The selective acquisition of knowledge through the use of manual programs

[View Answer](#)

Answer: a

Explanation: Machine learning is the autonomous acquisition of knowledge through the use of computer programs.

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

- a) Sensors and Actuators
- b) Sensors
- c) Perceiver
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: An agent is anything that can be viewed as perceiving and acting upon the environment through the sensors and actuators.

2. What is the expansion if PEAS in task environment?

- a) Peer, Environment, Actuators, Sense
- b) Perceiving, Environment, Actuators, Sensors
- c) Performance, Environment, Actuators, Sensors
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Task environment will contain PEAS which is used to perform the action independently.

3. What kind of environment is strategic in artificial intelligence?

- a) Deterministic
- b) Rational
- c) Partial
- d) Stochastic

[View Answer](#)

Answer: a

Explanation: If the environment is deterministic except for the action of other agent is called deterministic.

4. What kind of environment is crossword puzzle?

- a) Static
- b) Dynamic
- c) Semi Dynamic
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: As the problem in crossword puzzle are posed at beginning itself, So it is static.

1. What is the main task of a problem-solving agent?

- a) Solve the given problem and reach to goal
- b) To find out which sequence of action will get it to the goal state
- c) All of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: The problem-solving agents are one of the goal-based agents.

2. What is state space?

- a) The whole problem
- b) Your Definition to a problem
- c) Problem you design
- d) Representing your problem with variable and parameter

[View Answer](#)

Answer: d

Explanation: Because state space is mostly concerned with a problem, when you try to solve a problem, we have to design a mathematical structure to the problem, which can only be through variables and parameters. eg. You have given a 4-gallon jug and another 3-gallon jug. Neither has measuring marker on it. You have to fill the jugs with water. How can you get exactly 2 gallons of water in to 4 gallons. Here the state space can defined as set of ordered pairs integers(x,y), such that $x=0,1,2,3$ or 4 and $y=0,1,2$ or 3 ; X represents the number of gallons in 4 gallon jug and y represents the quantity of water in the 3-gallon jug.

3. The problem-solving agent with several immediate options of unknown value can decide what to do by just examining different possible sequences of actions that lead to states of known value, and then choosing the best sequence. This process of looking for such a sequence is called Search.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: Refer to the definition of problem-solving agent.

5. A problem in a search space is defined by one of these state.

- a) Initial state
- b) Last state
- c) Intermediate state
- d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: A problem has four components initial state, goal test, set of actions, path cost.

1. Which search strategy is also called as blind search?

- a) Uninformed search
- b) Informed search
- c) Simple reflex search
- d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: In blind search, We can search the states without having any additional information. So uninformed search method is blind search.

2. How many types are available in uninformed search method?

- a) 3
- b) 4
- c) 5
- d) 6

[View Answer](#)

Answer: c

Explanation: The five types of uninformed search method are Breadth-first, Uniform-cost, Depth-first, Depth-limited and Bidirectional search.

3. Which search is implemented with an empty first-in-first-out queue?

- a) Depth-first search
- b) Breadth-first search
- c) Bidirectional search
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Because of FIFO queue, it will assure that the nodes that are visited first will be expanded first.

. When is breadth-first search is optimal?

- a) When there is less number of nodes
- b) When all step costs are equal
- c) When all step costs are unequal
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Because it always expands the shallowest unexpanded node.

9. Which search algorithm imposes a fixed depth limit on nodes?

- a) Depth-limited search
- b) Depth-first search
- c) Iterative deepening search
- d) Bidirectional search

[View Answer](#)

Answer: a

Explanation: None.

0. Which search implements stack operation for searching the states?

- a) Depth-limited search
- b) Depth-first search
- c) Breadth-first search
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: It implements stack operation because it always expands the deepest node in the current tree.

1. What is the general term of Blind searching?

- a) Informed Search
- b) Uninformed Search
- c) Informed & Unformed Search
- d) Heuristic Search

[View Answer](#)

Answer: b

Explanation: In case of uninformed search no additional information except the problem definition is given.

2. Strategies that know whether one non-goal state is “more promising” than another are called _____

- a) Informed & Unformed Search
- b) Unformed Search
- c) Heuristic & Unformed Search
- d) Informed & Heuristic Search

[View Answer](#)

Answer: d

Explanation: Strategies that know whether one non-goal state is “more promising” than another are called informed search or heuristic search strategies

3. Which of the following is/are Uninformed Search technique/techniques?

- a) Breadth First Search (BFS)
- b) Depth First Search (DFS)
- c) Bidirectional Search
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Several uninformed search techniques includes BFS, DFS, Uniform-cost, Depth-limited, Bidirectional search etc.

4. Which data structure conveniently used to implement BFS?

- a) Stacks
- b) Queues
- c) Priority Queues
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: Queue is the most convenient data structure, but memory used to store nodes can be reduced by using circular queues.

5. Which data structure conveniently used to implement DFS?

- a) Stacks
- b) Queues
- c) Priority Queues
- d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: DFS requires node to be expanded the one most recent visited, hence stack is convenient to implement.

7. Breadth-first search is not optimal when all step costs are equal, because it always expands the shallowest unexpanded node.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: Breadth-first search is optimal when all step costs are equal, because it always expands the shallowest unexpanded node. If the solution exists in shallowest node no irrelevant nodes are expanded.

8. uniform-cost search expands the node n with the _____

- a) Lowest path cost
- b) Heuristic cost
- c) Highest path cost
- d) Average path cost

[View Answer](#)

Answer: a

Explanation: Uniform-cost search expands the node n with the lowest path cost. Note that if all step costs are equal, this is identical to breadth-first search.

9. Depth-first search always expands the _____ node in the current fringe of the search tree.

- a) Shallowest
- b) Child node
- c) Deepest
- d) Minimum cost

[View Answer](#)

Answer: c

Explanation: Depth-first search always expands the deepest/leaf node in the current fringe of the search tree.

10. Breadth-first search always expands the _____ node in the current fringe of the search tree.

- a) Shallowest
- b) Child node
- c) Deepest
- d) Minimum cost

[View Answer](#)

Answer: a

Explanation: Breadth-first search always expands the shallowest node in the current fringe of the search tree. Traversal is performed level wise.

15. DFS is ____ efficient and BFS is _____ efficient.

- a) Space, Time
- b) Time, Space
- c) Time, Time
- d) Space, Space

[View Answer](#)

Answer: a

Explanation: None.

1. What is the other name of informed search strategy?

- a) Simple search
- b) Heuristic search
- c) Online search
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: A key point of informed search strategy is heuristic function, So it is called as heuristic function.

2. How many types of informed search method are in artificial intelligence?

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

[View Answer](#)

Answer: d

Explanation: The four types of informed search method are best-first search, Greedy best-first search, A* search and memory bounded heuristic search.

3. Which search uses the problem specific knowledge beyond the definition of the problem?

- a) Informed search
- b) Depth-first search
- c) Breadth-first search
- d) Uninformed search

[View Answer](#)

Answer: a

Explanation: Informed search can solve the problem beyond the function definition, So does it can find the solution more efficiently.

4. Which function will select the lowest expansion node at first for evaluation?

- a) Greedy best-first search
- b) Best-first search
- c) Depth-first search
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: The lowest expansion node is selected because the evaluation measures distance to the goal.

5. What is the heuristic function of greedy best-first search?

- a) $f(n) \neq h(n)$
- b) $f(n) < h(n)$
- c) $f(n) = h(n)$
- d) $f(n) > h(n)$

[View Answer](#)

Answer: c

Explanation: None.

6. Which search uses only the linear space for searching?

- a) Best-first search
- b) Recursive best-first search
- c) Depth-first search
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Recursive best-first search will mimic the operation of standard best-first search, but using only the linear space.

7. Which method is used to search better by learning?

- a) Best-first search
- b) Depth-first search
- c) Metalevel state space
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: This search strategy will help to problem solving efficiency by using learning

8. Which search is complete and optimal when $h(n)$ is consistent?

- a) Best-first search
- b) Depth-first search
- c) Both Best-first & Depth-first search
- d) A* search

[View Answer](#)

Answer: d

Explanation: None.

9. Which is used to improve the performance of heuristic search?

- a) Quality of nodes
- b) Quality of heuristic function
- c) Simple form of nodes
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Good heuristic can be constructed by relaxing the problem, So the performance of heuristic search can be improved.

10. Which search method will expand the node that is closest to the goal?

- a) Best-first search
- b) Greedy best-first search
- c) A* search
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Because of using greedy best-first search, It will quickly lead to the solution of the problem.

1. 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 another
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: In a heuristic approach, we discover certain idea and use heuristic functions to search for a goal and predicates to compare nodes.

2. A* algorithm is based on _____

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

[View Answer](#)

Answer: c

Explanation: Best-first-search is giving the idea of optimization and quick choose of path, and all these characteristic lies in A* algorithm.

3. The search strategy the uses a problem specific knowledge is known as _____

- a) Informed Search
- b) Best First Search
- c) Heuristic Search
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: The problem specific knowledge is also known as Heuristics and Best-First search uses some heuristic to choose the best node for expansion

5. Best-First search is a type of informed search, which uses _____ to choose the best next node for expansion.

- a) Evaluation function returning lowest evaluation
- b) Evaluation function returning highest evaluation
- c) Evaluation function returning lowest & highest evaluation
- d) None of them is applicable

[View Answer](#)

Answer: a

Explanation: Best-first search is an instance of the general TREE-SEARCH or GRAPH-SEARCH algorithm in which a node is selected for expansion based on an evaluation function, $f(n)$. Traditionally, the node with the lowest evaluation is selected for expansion, because the evaluation measures distance to the goal.

6. Best-First search can be implemented using the following data structure.

- a) Queue
- b) Stack
- c) Priority Queue
- d) Circular Queue

[View Answer](#)

Answer: c

Explanation: Best-first search can be implemented within our general search framework via a priority queue, a data structure that will maintain the fringe in ascending order of f-values.

8. Heuristic function $h(n)$ is _____

- a) Lowest path cost
- b) Cheapest path from root to goal node
- c) Estimated cost of cheapest path from root to goal node
- d) Average path cost

[View Answer](#)

Answer: c

Explanation: Heuristic is an estimated cost.

9. Greedy search strategy chooses the node for expansion in _____

- a) Shallowest
- b) Deepest
- c) The one closest to the goal node
- d) Minimum heuristic cost

[View Answer](#)

Answer: c

Explanation: Sometimes minimum heuristics can be used, sometimes maximum heuristics function can be used. It depends upon the application on which the algorithm is applied.

10. What is the evaluation function in greedy approach?

- a) Heuristic function
- b) Path cost from start node to current node
- c) Path cost from start node to current node + Heuristic cost
- d) Average of Path cost from start node to current node and Heuristic cost

[View Answer](#)

Answer: a

Explanation: Greedy best-first search tries to expand the node that is closest to the goal, on the grounds that this is likely to lead to a solution quickly. Thus, it evaluates nodes by using just the heuristic function: $f(n) = h(n)$.

12. What is the evaluation function in A* approach?

- a) Heuristic function
- b) Path cost from start node to current node
- c) Path cost from start node to current node + Heuristic cost
- d) Average of Path cost from start node to current node and Heuristic cost

[View Answer](#)

Answer: c

Explanation: The most widely-known form of best-first search is called A* search. It evaluates nodes by combining $g(n)$, the cost to reach the node, and $h(n)$, the cost to get from the node to the goal: $f(n) = g(n) + h(n)$. Since $g(n)$ gives the path cost from the start node to node n , and $h(n)$ is the estimated cost of the cheapest path from n to the goal.

5. When will Hill-Climbing algorithm terminate?

- a) Stopping criterion met
- b) Global Min/Max is achieved
- c) No neighbor has higher value
- d) All of the mentioned

[View Answer](#)

Answer: c

Explanation: When no neighbor is having higher value, algorithm terminates fetching local min/max.

6. What are the main cons of hill-climbing search?

- a) Terminates at local optimum & Does not find optimum solution**
- b) Terminates at global optimum & Does not find optimum solution**
- c) Does not find optimum solution & Fail to find a solution**
- d) Fail to find a solution**

View Answer

Answer: a

Explanation: Algorithm terminates at local optimum values, hence fails to find optimum solution.

8. Hill climbing sometimes called _____ because it grabs a good neighbor state without thinking ahead about where to go next.

- a) Needy local search**
- b) Heuristic local search**
- c) Greedy local search**
- d) Optimal local search**

View Answer

Answer: c

Explanation: None.

12. What are the two main features of Genetic Algorithm?

- a) Fitness function & Crossover techniques**
- b) Crossover techniques & Random mutation**
- c) Individuals among the population & Random mutation**
- d) Random mutation & Fitness function**

View Answer

Answer: a

Explanation: Fitness function helps choosing individuals from the population and Crossover techniques defines the offspring generated.

4. The term _____ is used for a depth-first search that chooses values for one variable at a time and returns when a variable has no legal values left to assign.

- a) Forward search
- b) Backtrack search
- c) Hill algorithm
- d) Reverse-Down-Hill search

[View Answer](#)

Answer: b

Explanation: Refer definition of backtracking algorithm.

13. Backtracking is based on _____

- a) Last in first out
- b) First in first out
- c) Recursion
- d) Both Last in first out & Recursion

[View Answer](#)

Answer: d

Explanation: Recursion uses LIFO.

1. Which is the most straightforward approach for planning algorithm?

- a) Best-first search
- b) State-space search
- c) Depth-first search
- d) Hill-climbing search

[View Answer](#)

Answer: b

Explanation: The straightforward approach for planning algorithm is state space search because it takes into account of everything for finding a solution.

6. What is the main advantage of backward state-space search?

- a) Cost
- b) Actions
- c) Relevant actions
- d) All of the mentioned

[View Answer](#)

Answer: c

Explanation: The main advantage of backward search will allow us to consider only relevant actions.

1. Which search is equal to minimax search but eliminates the branches that can't influence the final decision?

- a) Depth-first search
- b) Breadth-first search
- c) Alpha-beta pruning
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: The alpha-beta search computes the same optimal moves as minimax, but eliminates the branches that can't influence the final decision.

4. Which search is similar to minimax search?

- a) Hill-climbing search
- b) Depth-first search
- c) Breadth-first search
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: The minimax search is depth-first search, So at one time we just have to consider the nodes along a single path in the tree.

5. Which value is assigned to alpha and beta in the alpha-beta pruning?

- a) Alpha = max
- b) Beta = min
- c) Beta = max
- d) Both Alpha = max & Beta = min

[View Answer](#)

Answer: d

Explanation: Alpha and beta are the values of the best choice we have found so far at any choice point along the path for MAX and MIN.

2. Translate the following statement into FOL.

“For every a, if a is a philosopher, then a is a scholar”

- a) $\forall a \text{ philosopher}(a) \text{ scholar}(a)$
- b) $\exists a \text{ philosopher}(a) \text{ scholar}(a)$
- c) All of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

5. How many types are available in machine learning?

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

[View Answer](#)

Answer: c

Explanation: The three types of machine learning are supervised, unsupervised and reinforcement.

10. How the decision tree reaches its decision?

- a) Single test**
- b) Two test**
- c) Sequence of test**
- d) No test**

View Answer

Answer: c

Explanation: A decision tree reaches its decision by performing a sequence of tests.

6. In which of the following learning the teacher returns reward and punishment to learner?

- a) Active learning**
- b) Reinforcement learning**
- c) Supervised learning**
- d) Unsupervised learning**

View Answer

Answer: b

Explanation: Reinforcement learning is the type of learning in which teacher returns reward or punishment to learner.

Decision trees are appropriate for the problems where _____

- a) Attributes are both numeric and nominal**
- b) Target function takes on a discrete number of values.**
- c) Data may have errors**
- d) All of the mentioned**

View Answer

Answer: d

Explanation: Decision trees can be used in all the conditions stated.

10. Which of the following is also called as exploratory learning?

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

[View Answer](#)

Answer: c

Explanation: In unsupervised learning, no teacher is available hence it is also called unsupervised learning.

3. In an Unsupervised learning _____

- a) Specific output values are given
- b) Specific output values are not given
- c) No specific Inputs are given
- d) Both inputs and outputs are given

[View Answer](#)

Answer: b

Explanation: The problem of unsupervised learning involves learning patterns in the input when no specific output values are supplied. We cannot expect the specific output to test your result. Here the agent does not know what to do, as he is not aware of the fact what propose system will come out. We can say an ambiguous un-proposed situation.

1. A _____ is a decision support tool that uses a tree-like graph or model of decisions and their possible consequences, including chance event outcomes, resource costs, and utility.

- a) Decision tree
- b) Graphs
- c) Trees
- d) Neural Networks

[View Answer](#)

Answer: a

Explanation: Refer the definition of Decision tree.

2. Decision Tree is a display of an algorithm.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: None.

3. What is Decision Tree?

- a) Flow-Chart
- b) Structure in which internal node represents test on an attribute, each branch represents outcome of test and each leaf node represents class label
- c) Flow-Chart & Structure in which internal node represents test on an attribute, each branch represents outcome of test and each leaf node represents class label
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Refer the definition of Decision tree.

6. Decision Nodes are represented by _____

- a) Disks
- b) Squares
- c) Circles
- d) Triangles

[View Answer](#)

Answer: b

Explanation: None.

9. Which of the following are the advantage/s of Decision Trees?

- a) Possible Scenarios can be added
- b) Use a white box model, If given result is provided by a model
- c) Worst, best and expected values can be determined for different scenarios
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.