

Answer of Ai-2020-q\_bank

1. General games involves
  - a. Single-agent
  - b. Multi-agent
  - c. Neither a nor b
  - d. Only a and b
2. "Artificial Intelligence means to mimic a human. Hence, if a robot can move from one place to another like a human, then it comes under Artificial Intelligence."
  - a. True
  - b. False
3. Which of the following is not a goal of AI?
  - a. Thinking humanly
  - b. Adapting to the environment and situations
  - c. To rule over humans
  - d. Real Life Problem Solving
4. "An AI agent is defined though it's PEAS." What does the term PEAS stand for?
  - a. *Personal Enhancement Area in Science*
  - b. *Performance, Environment, Actuators and Sensors*
  - c. *Performance, Entity, Area, State*
  - d. *None of the above*
5. Which of the mentioned parts of an agent would you consider to be the most valuable in terms of AI?
  - a. *Sensors and Actuators*
  - b. *Wheels and steering*
  - c. *Arms and legs*

*d. All of the above*

6. Which of the following classifications of the environment are valid?

- a. Deterministic and non- Deterministic
- b. Observable and partially-observable
- c. Static and dynamic
- d. **All of the above**

7. Which of the following mentioned searches are **heuristic** searches?

- i. Random Search
  - ii. Depth First Search
  - iii. Breadth First Search
  - iv. Best First Search
- a. **Only iv.**
  - b. All i., ii., iii. and iv.
  - c. ii. and iv.
  - d. None of the above

8. Consider the following statement:

"The search first begins from the root node and the first one of the child node's sub-tree is completely traversed. That is, first all the one-sided nodes are checked, and then the other sided nodes are checked."

Which search algorithm is described in the above definition?

- a. The Breadth First Search (BFS)
- b. **The Depth First Search (DFS)**
- c. The A\* search
- d. None of the above

9. "In AI search algorithms, we look for a solution which provides us the most optimized way in terms of both time and cost to reach from the current state to the Goal State."

- a. **True**
- b. False

10. Adversarial search problems uses

- a. **Competitive Environment**
- b. Cooperative Environment
- c. Neither a nor b
- d. Only a and b

11. The initial state and the legal moves for each side define the \_\_\_\_\_ for the game.
- a. Search Tree
  - b. Game Tree**
  - c. State Space Search
  - d. Forest
12. General algorithm applied on **game** tree for making decision of **win/lose** is \_\_\_\_\_.
- a. DFS/BFS Search Algorithms
  - b. Heuristic Search Algorithms
  - c. Greedy Search Algorithms
  - d. MIN/MAX Algorithms**
13. 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
14. Which search is similar to minimax search?
- a. Hill-climbing search
  - b. Depth-first search**
  - c. Breadth-first search
  - d. All of the mentioned

15. How the effectiveness of the alpha-beta pruning gets increased?
- a. Depends on the nodes
  - b. Depends on the order in which they are executed
  - c. Both a & b
  - d. None of the mentioned
16. Which function is used to calculate the feasibility of whole game tree?
- a. Evaluation function
  - b. Transposition
  - c. Alpha-beta pruning
  - d. All of the mentioned
17. Where does the values of alpha-beta search get updated?
- a. Along the path of search
  - b. Initial state itself
  - c. At the end
  - d. None of the mentioned
18. Which value is assigned to alpha and beta in the alpha-beta pruning?
- a. Alpha = max
  - b. Beta = min
  - c. Beta = max
  - d. Both a & b

19. To which depth does the alpha-beta pruning can be applied?
- a. 10 states
  - b. 8 States
  - c. 6 States
  - d. Any depth
20. 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
21. The main task of a problem-solving agent is
- 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. Both a and b
  - d. Neither a nor b
22. 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
23. A search algorithm takes \_\_\_\_\_ as an input and returns \_\_\_\_\_ as an output.
- a. Input, output

b. Problem, solution

c. Solution, problem

d. Parameters, sequence of actions

24. A problem in a search space is defined by

a. Initial state

b. Goal test

c. Intermediate states

d. Both a and b

25. The Set of actions for a problem in a state space is formulated by a \_\_\_\_\_.

a. Intermediate states

b. Initial state

c. Successor function, which takes current action and returns next immediate state

d. None of the mentioned

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

a. Uninformed search

b. Informed search

c. Simple reflex search

d. All of the mentioned

27. 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
- 28. 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. Both a & c
- 29. Which algorithm is used to solve any kind of problem?
  - a. Breath-first algorithm
  - b. Tree algorithm
  - c. Bidirectional search algorithm
  - d. None of the mentioned
- 30. 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
- 31. 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

32. What is the other name of informed search strategy?
- a. Simple search
  - b. Heuristic search**
  - c. Online search
  - d. None of the mentioned
33. How many types of informed search method are in artificial intelligence?
- a. 1
  - b. 2
  - c. 3
  - d. 4**
34. 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
35. 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
36. A solution to a problem is a path from the initial state to a goal state. Solution quality is measured by the path cost function, and an optimal solution has the highest path cost among all solutions.
- a) True



b) False

37. Which search method takes less memory?

a) Depth-First Search

b) Breadth-First search

c) Linear Search

d) Optimal search

38. What is the space complexity of Depth-first search?

a)  $O(b)$

b)  $O(bl)$

c)  $O(m)$

d)  $O(bm)$

39. 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

40. 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

41. Which data structure conveniently used to implement BFS?

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

42. **Priority Queues can be used to implement BFS?**

- a) True**
- b) False

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

- a) True
- b) False**

44. uniform-cost search expands the node n with the \_\_\_\_\_

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

45. 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

46. 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
47. DFS is \_\_\_\_\_ efficient and BFS is \_\_\_\_\_ efficient.
- a) Space, Time
  - b) Time, Space
  - c) Time, Time
  - d) Space, Space
48. What is the heuristic function of greedy search?
- a)  $f(n) \neq h(n)$
  - b)  $f(n) < h(n)$
  - c)  $f(n) = h(n)$
  - d)  $f(n) > h(n)$
49. 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
50. 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
51. Which search method will expand the node that is closest to the goal?
- a) Best-first search
  - b) Greedy search

- c) A\* search  
d) None of the mentioned
52. 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
53. In terms of uninformed search strategies are better than informed search strategies.
- a) True  
b) False
54. 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
55. 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
56. 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

57. 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
58. A\* is optimal if  $h(n)$  is an admissible heuristic-that is, provided that  $h(n)$  never underestimates the cost to reach the goal.
- a) True
  - b) False
59. Which is created by using single propositional symbol?
- a) Complex sentences
  - b) Atomic sentences
  - c) Composition sentences
  - d) None of the mentioned
60. Which is used to construct the complex sentences?
- a) Symbols
  - b) Connectives
  - c) Logical connectives
  - d) All of the mentioned
61. How many logical connectives are there in artificial intelligence?
- a) 2
  - b) 3
  - c) 4
  - d) 5
62. Which is used to compute the truth of any sentence?
- a) Semantics of propositional logic
  - b) Alpha-beta pruning
  - c) First-order logic
  - d) Both Semantics of propositional logic & Alpha-beta pruning

63. A knowledge-based agent can combine general knowledge with current percepts to infer hidden aspects of the current state prior to selecting actions.

a) True

b) False

64. Zero sum games are the one in which there are two agents whose actions must alternate and in which the utility values at the end of the game are always the same.

a) True

b) False

65. Zero sum game has to be a \_\_\_\_\_ game.

a) Single player

b) Two player

c) Multiplayer

d) Three player

66. A game can be formally defined as a kind of search problem with the following components.

a) Initial State

b) Successor Function

c) Terminal Test

d) All of the mentioned

67. The minimax algorithm computes the minimax decision from the current state. It uses a simple recursive computation of the minimax values of each successor state, directly implementing the defining equations. The recursion proceeds all the way down to the leaves of the tree, and then the minimax values are backed up through the tree as the recursion unwinds.

a) True

b) False

68. What is the complexity of minimax algorithm?

a) Same as of DFS

- b) Space – bm and time – bm
- c) Time – bm and space – bm
- d) Same as BFS

69. An AI agent perceives and acts upon the environment using\_\_\_\_.

- 1. Sensors
- 2. Perceiver
- 3. Actuators
- 4. **Both a and c**

70. Which rule is applied for the Simple reflex agent?

- 1. Simple-action rule
- 2. Simple &Condition-action rule
- 3. **Condition-action rule**
- 4. None of the above

71. Which agent deals with the happy and unhappy state?

- 1. **Utility-based agent**
- 2. Model-based agent
- 3. Goal-based Agent
- 4. Learning Agent

72. The exploration problem is where\_\_\_\_\_.

- a) Agent contains the knowledge of State and actions.
- b) **Agent does not contain the knowledge of State and actions.**
- c) Only actions are known to the agent.
- d) None of the above

73. The search algorithm which is similar to the minimax search, but removes the branches that don't affect the final output is known as\_\_.

- 1. Depth-first search
- 2. Breadth-first search
- 3. **Alpha-beta pruning**
- 4. None of the above

74. Which algorithm takes two sentences as input and returns a Unifier?

- 1. Inference
- 2. Hill-Climbing
- 3. **Unify algorithm**

4. Depth-first search

75. The PEAS in the task environment is about\_\_\_\_\_.

1. Peer, Environment, Actuators, Sense
2. **Performance, Environment, Actuators, Sensors**
3. Perceiving, Environment, Actuators, Sensors
4. None of the above

76. In state-space, the set of actions for a given problem is expressed by the\_\_\_\_\_.

1. Intermediate States
2. **Successor function that takes current action and returns next state**
3. Initial States
4. None of the above

77. In which search problem, to find the shortest path, each city must be visited once only?

1. Map coloring Problem
2. Depth-first search traversal on a given map represented as a graph
3. Finding the shortest path between a source and a destination
4. **Travelling Salesman problem**

78. The main function of problem-solving agent is to\_\_\_\_\_.

1. Solve the given problem and reach the goal
2. Find out which sequence of action will get it to the goal state.
3. **Both a & b**
4. None of the above

79. In artificial Intelligence, knowledge can be represented as\_\_\_\_\_.

i. Predicate Logic

ii. Propositional Logic

iii. Compound Logic

iv. Machine Logic

1. **Both I and II**
2. Only II
3. Both II and III
4. Only IV



80. Ways to achieve AI in real-life are\_\_\_\_\_.

1. Machine Learning
2. Deep Learning
3. **Both a & b**
4. None of the above

81. The main tasks of an AI agent are\_\_\_\_\_.

1. Input and Output
2. Moment and Humanly Actions
3. **Perceiving, thinking, and acting on the environment**
4. None of the above

82. An Algorithm is said as Complete algorithm if\_\_\_\_\_

1. **It ends with a solution (if any exists).**
2. It begins with a solution.
3. It does not end with a solution.
4. It contains a loop


83. Which statement is valid for the Heuristic function?

1. The heuristic function is used to solve mathematical problems.
2. The heuristic function takes parameters of type string and returns an integer value.
3. The heuristic function does not have any return type.
4. **The heuristic function calculates the cost of an optimal path between the pair of states.**

84. Which of the given element improve the performance of AI agent so that it can make better decisions?

1. Changing Element
2. Performance Element
3. **Learning Element**
4. None of the above

85. **What is Artificial intelligence?**

-  Programming with your own intelligence

- ☐ Putting your intelligence into Computer
- ☐ **Making a Machine intelligent**
- ☐ Playing a Game

86. **Weak AI is**

- ☐ a set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans.
- ☐ **the study of mental faculties through the use of mental models implemented on a computer.**
- ☐ the embodiment of human intellectual capabilities within a computer.
- ☐ All of the above

87. **What is Artificial intelligence?**

- ☐ **Making a Machine intelligent**
- ☐ Putting your intelligence into Computer
- ☐ Programming with your own intelligence
- ☐ putting more memory into Computer

88. **A heuristic is a way of trying**

- ☐ To search and measure how far a node in a search tree seems to be from a goal
- ☐ To discover something or an idea embedded in a program
- ☐ To compare two nodes in a search tree to see if one is better than the other

- ☐ All are correct

89. What kind of behavior does the stochastic environment posses?

- ☐ Deterministic
- ☐ Local
- ☐ Primary
- ☐ Rational

[View Answer](#)

90. Which is the following is most straightforward approach for planning algorithm?

- ☐ Best-first search
- ☐ Depth First Search
- ☐ State space search
- ☐ Binary Search

91. Computational intelligence is a form of \_\_\_\_\_.

- ☐ Knowledge management
- ☐ Singularity
- ☐ Artificial intelligence
- ☐ case-based reasoning

92. Which of the following is not a stage of AI?

- ☐ Predictive analytics
- ☐ Diagnostic analytics
- ☐ Cognitive analytics
- ☐ All of the above

93. The core components are constituents of ai are derived from .....

- ☐ Cognition
- ☐ Computation
- ☐ Concept of logic
- ☐ All of the above

[View Answer](#)

94. Strong AI is .....

- ☐ The embodiment of human intellectual capabilities within a computer.
- ☐ The study of mental faculties through the use of mental models implemented on a computer.
- ☐ Both A & B
- ☐ None of the above

[View Answer](#)

The embodiment of human intellectual capabilities within a computer.

95. What is state space in AI?

- ☐ The whole problem
- ☐ Problem you design
- ☐ The whole problem
- ☐ Representing your problem with variable and parameter

[View Answer](#)

Representing your problem with variable and parameter

96. [Face recognition system is based on which AI?](#)

- ☐ Serial AI
- ☐ Parallel AI
- ☐ Applied AI
- ☐ Strong AI

97. [What are the main goals of AI?](#)

- ☐ Create Expert Systems
- ☐ Implement Human Intelligence in Machines
- ☐ Both Options
- ☐ None of the above

[View Answer](#)

Both Options

98. [What is the frame in AI?](#)

- ☐ Data Type
- ☐ Data Structure
- ☐ A way of representing knowledge
- ☐ All of the above

A way of representing knowledge

99. Which of the following is an application of AI?

- ☐ Gamings
- ☐ Vision Systems
- ☐ Expert Systems
- ☐ All of the above

100. A problem in a search space is defined by .....

- ☐ Last state
- ☐ Initial state
- ☐ Intermediate state
- ☐ None of the above

[View Answer](#)

Intermediate state

101. **Which of the following language is a declarative language?**

(a) Algol (b) Java (c) C++ (d) C# (e) Prolog      Answer: e

102. **Which one of the following is not a type of polymorphism**

(a) coercion (b) overloading (c) overriding (d) generics (e) All of them are types of polymorphism  
Answer: c

103. **What formal system provides the semantic foundation for Prolog?**

(a) Predicate calculus; (b) Lambda calculus; (c) Hoare logic; (d) Propositional logic. Answer: a

104. **Which of the following is the advantage of declarative languages over imperative languages?**

(a) Can use abstract data type; (b) Easy to verify the properties of the program; (c) Is more efficient;  
(d) Can be implemented by an interpreter or compiler; (e) Can be strong-typed. Answer: b

105. **In logic programming, the program declares the goals of the computations, not the method for achieving them.**

A) True B) False

106. **what are the Sector Where Prolog Programming Language Is Used?**

- (a) Automated reasoning
- (b) Machine learning
- (c) Robot planning
- (d) all of the above**

107. **dog('Buddy', likes('Buddy', toast)). - This statement is**

- (a) Rule & Horn Clause
- (b) Fact & Horn Clause**
- (c) Horn Clause with Head and body
- (d) Not a Horn clause

108. **Which one of the following is not a variable?**

- (a) X\_yz
- (b) g\_23A

(c)     '\_Xyz'

**(d)     B & C both**

109.       Which one from the options would return true/yes for given prolog program?

boy(john,123).

girl(jane,234).

student(john,123).

(a)     ?- girl(jane,x).

**(b)     ?- boy('john',123).**

(c)     All of above.

(d)     None of above

110.       A prolog query can be made up of only two subgoals.

(a)     TRUE

**(b)     FALSE**

111.       In Prolog It Is Said That Program And Data Are The Same Thing?

**(a)     TRUE**

(b)     FALSE

112.       what is the use of '=' in prolog programming?

**(a)     unification**

(b)     arithmetic evaluation

(c)     reduction

(d)     None of above

113.       what is the use of 'is' in prolog programming?

(a)     unification

**(b)     arithmetic evaluation**

(c)     reduction



(d) None of above

114. Which of the following language is a declarative language?

- (a) C#
- (b) Algol
- (c) Prolog**
- (d) Java

115. What Are The Features Of Prolog Language?

- (a) Intelligent Systems
- (b) Expert Systems
- (c) Natural Language Systems
- (d) all of the above**

116. Why We Use Prolog Programming Language?

- (a) SWI-Prolog is free, open-source, and very well maintained.
- (b) It's much much easier to distribute SWI-Prolog applications than Java ones
- (c) Prolog is much less verbose, which is helpful when during development.
- (d) all of the above**

117. The scope of a variable in Prolog is a single clause (i.e., a fact or rule) or a single query.

- (a) TRUE**
- (b) FALSE

118. "Unification is transitive (i.e., assuming that t1, t2 and t3 are arbitrary Prolog terms, if t1 unifies with t2 and t2 unifies with t3 then t1 must unify with t3. "

- (a) TRUE
- (b) FALSE**

119. A variable in Prolog must start with either an upper-case letter or an underscore  
(  ).

**(a) TRUE**

(b) FALSE

120. A Prolog variable can only be assigned to a value once

**(a) TRUE**

(b) FALSE