



Department of Information Technology

## Artificial Intelligence – Chapter 2

- 1) What is the other name for forward state-space search?
  - A. Progression planning
  - B. Regression planning
  - C. Test planning
  - D. None of the mentioned
  
- 2) How many states are available in state-space search?
  - A. 1
  - B. 2
  - C. 3
  - D. 4
  
- 3) What is the main advantage of backward state-space search?
  - A. Cost
  - B. Actions
  - C. Relevant actions
  - D. All of the mentioned
  
- 4) How many ways are available to solve the state-space search?
  - A. 1
  - B. 2
  - C. 3
  - D. 4
  
- 5) What are taken into account of state-space search?
  - A. Postconditions
  - B. Preconditions
  - C. Effects
  - D. Both Preconditions & Effects
  
- 6) 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
  
- 7) What is meant by consistent in state-space search?
  - A. Change in the desired literals
  - B. Not any change in the literals

- C. No change in goal state
  - D. None of the mentioned
- 8) Which search is similar to minimax search?

A. Hill-climbing search B.

**Depth-first search**

- C. Breadth-first search
- D. All of the mentioned

- 9) Which search method takes less memory?

A. Depth-First Search

- B. Breadth-First search
- C. Optimal search
- D. Linear Search

- 10) 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

- 11) What is a heuristic function?

- A. A function to solve mathematical problems
- B. A function which takes parameters of type string and returns an integer value
- C. A function whose return type is nothing
- D. A function that maps from problem state descriptions to measures of desirability

- 12) Which is true regarding BFS (Breadth First Search)?

- A. BFS will get trapped exploring a single path
- B. The entire tree so far been generated must be stored in BFS
- C. BFS is not guaranteed to find a solution if exists
- D. BFS is nothing but Binary First Search

- 13) Production is system provides-----

- A. security
- B. production
- C. Structures
- D. Rules

- 14) The first requirement of good control strategy is that it-----

- A. Cause motion
- B. Systematic
- C. Both a & b
- D. solution

15)The second first requirement of good control strategy is that it-----

- A. solution
- B. systematic**
- C. cause motion
- D. none of these

16)Heuristics are like -----

- A. tour guide**
- B. problem
- C. both a&b
- D. none of these

17) Heuristic search is a very general method applicable to a -----problems

- A. class
- B. large class**
- C. small class
- D. none

18) Heuristic is an-----

- A. technique**
- B. problems
- C. both a&b
- D. none o f these

19) Heuristic is an improve the efficiency of a-----

- A. search process**
- B. solution process
- C. problem solve process
- D. none of these

20)Depth –first search is requires -----

- A. less memory**
- B. large memory
- C. both a& b
- D. none of these

### Chapter -3 Heuristic Search Techniques

- 1) The generate\_and\_test algorithm is \_\_\_\_\_procedure
  - A. **Depth first search**
  - B. Breadth\_first search
  - C. Heuristic search
  - D. None of these
- 2) Breadth-first search is good because it does not get trapped on-----
  - A. **Dead-end paths**
  - B. Paths
  - C. Sart\_end paths
  - D. End paths
- 3) The breath – first search algorithm that was just presented is simplification of an algorithm called-----
  - A. \*b
  - B. **A\***
  - C. H\*
  - D. a\*
- 4) A\* algorithm that was first presented by-----
  - A. Kirk Partick
  - B. Moshe Arents
  - C. **Hart**
  - D. Lindsay
- 5) \_\_\_\_\_ Is an algorithm, a loop that continually moves in the direction of increasing value – \_\_\_\_\_ that is uphill.
  - a) Up-Hill Search
  - b) Hill-Climbing
  - c) Hill algorithm
  - d) **Reverse-Down-Hill search**
- 6) 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
- 7) 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

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

10) Hill-Climbing approach stuck for which of the following reasons?

- a) Local maxima
- b) Ridges
- c) Plateaux
- d) **All of the mentioned**

**11)** Which of the following is not an application of Breadth First Search?

- a) Finding shortest path between two nodes
- b) Finding bipartiteness of a graph
- c) GPS navigation system
- d) **Path Finding**

**12)** When the Breadth First Search of a graph is unique?

- a) When the graph is a Binary Tree
- b) **When the graph is a Linked List**
- c) When the graph is a n-ary Tree
- d) When the graph is a Ternary Tree

13) The \_\_\_\_\_ algorithm is guaranteed to find an optimal path to goal, if one exists

- a) **A\***
- b) AO\*
- c) Breadth\_first search
- d) Depth-first search

14) The third observation we can make about the \_\_\_\_\_ has to do with the relationship between trees and graphs

- a) AO\* algorithm
- b) **A\* algorithm**
- c) Both a&b
- d) None of these

15) An agenda\_driven control structure is also useful if some tasks provide \_\_\_\_\_ evidence about the merits of other tasks

- a) **Negative**
- b) Positive

- c) Both a&b
- d) None

16) the agenda task faced by the mathematics discovery program\_\_\_\_\_

- a) PM
- b) CM
- c) **AM**
- d) None

17) AM was written by \_\_\_\_\_

- a) Hart
- b) **Lenat**
- c) Martelli
- d) Kirkpatrick

18)An agenda is a list of \_\_\_\_\_in system could perform

- a) Problems
- b) Tasks
- c) Structures
- d) State

19)\_\_\_\_\_is a variation of hill climbing in which, at the beginning of the process,some downhill moves may by made.

- a) Simulated annealing
- b) **Depth first search**
- c) Breadth\_first search
- d) Heuristic search

20) \_\_\_\_\_ annealing processes are very sensitive to the annealing schedule.

- a) Simulated
- b) **Physical**
- c) Both a&b
- d) None of these

21)Agenda are a good way to implement \_\_\_\_\_production systems

- a) **Monotonic**
- b) Diatonic
- c) Triatonic
- d) Non monotonic

22)\_\_\_\_\_is useful for representing the solution of problem

- a) OR graph
  - b) AND-OR graph**
  - c) OR-AND graph
  - d) None
- 23) The AND- OR graph can be solved by \_\_\_\_\_ them into a set of smaller problems
- a) Composing
  - b) Decomposing**
  - c) Both a&b
  - d) None of these
- 24)The decomposition,or reduction,generates arcs that we call\_\_\_\_\_
- a) AND point
  - b) AND arcs**
  - c) OR point
  - d) OR arcs
- 25) The \_\_\_\_\_ algorithm will use a single structure GRAPH
- a) A\*
  - b) AO\***
  - c) B\*
  - d) C\*