1. What does the following statement refer to?

A system that consists of symbols and processes is sufficient for intelligent action.

a) Turing Test
b) Total Turing Test
c) Searle's Argument
d) The Physical Symbol System Hypothesis
e) Strong AI

2. Which of the following is a negative attribute of the Turing Test?

a) Not a standard test
b) Wide variety of required knowledge
c) Focuses on symbolic tasks
d) Easy to do in practice
e) None of the above

3. Which of the following describes how a simple reflex agent works?

a) Maintain a model of what the world is like and utility information about situations. Combine the world model and utility information to choose an action to perform.
b) Maintain a model of what the world is like and goal information about desirable situations. Combine the world model and goal information to choose an action to perform.
c) Find a rule whose condition matches the current situation and perform the action associated with that rule.
d) Maintain a model of what the world is like to help find a rule whose condition matches the current situation. Perform the action associated with that rule.
e) None of the above

4. What ability does a computer require in order to pass the Total Turing Test?

a) Language
b) Reasoning
c) Vision
d) All of the above
e) Two of the above

5. What does the following definition refer to?

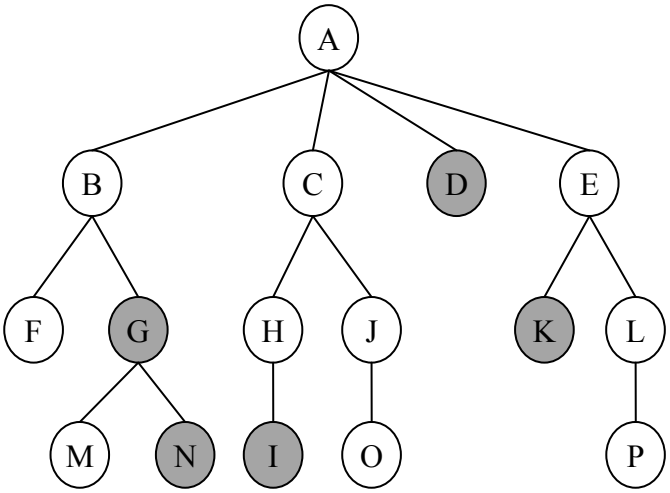
The strategy is guaranteed to find a solution when there is one.

a) Completeness
b) Time Complexity
c) Space Complexity
d) Optimality
e) None of the above

6. Which of the following is true about Depth First Search?

a) Only complete if the limit is set to below the depth of the shallowest solution
b) Only complete in finite spaces with repeated state detection
c) Only complete and optimal if the heuristic used is admissible
d) Always complete and optimal in finite search spaces
e) Never complete or optimal

The next two questions refer to the following tree:



7. What order will the shaded nodes in the tree above be expanded using Breadth First Search?

a) GNIDK
b) KDIGN
c) NIGKD
d) DGKNI
e) DKGNI

8. What order will the shaded nodes in the tree above be expanded using Iterative Deepening Search?

a) DGKNI
b) GNIDK
c) DDGKDGKNI
d) DKDGKDGIN
e) DGDKGNIDK

9. Which node in the fringe does A* search expand first?

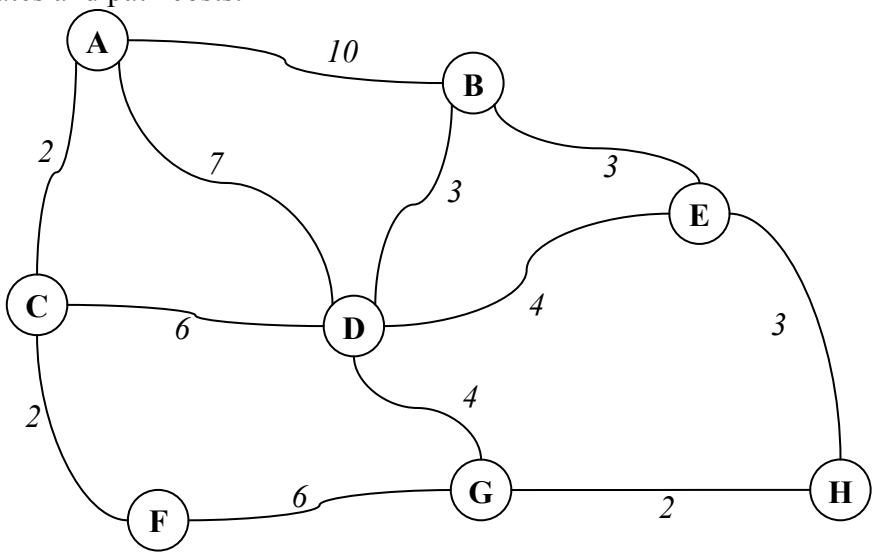
a) The node closest to the goal as given by the heuristic function
b) The node on the least-cost solution path as given by the heuristic and cost function
c) The node that will always lead to the optimal path
d) Options b and c
e) None of the above

10. Heuristic H1 is admissible if:

a) The effective branching factor is close to the branching factor for the problem
b) H1(n) is equal to the path cost to the goal for all n
c) H1(n) is larger than or equal to the path cost to the goal for all n
d) H1(n) is smaller than or equal to the path cost to the goal for all n
e) None of the above

The next two questions refer to the following map and table:

Map showing states and path costs:



Heuristic values of states:

A	10
B	5
C	8
D	4

E	3
F	6
G	2
H	0

11. With the initial state being A and the goal state being H, what are the first four nodes, in order, that will be expanded using Greedy Search?

a) ABEH
b) ACBD
c) ADEH
d) ADGH
e) ACFD

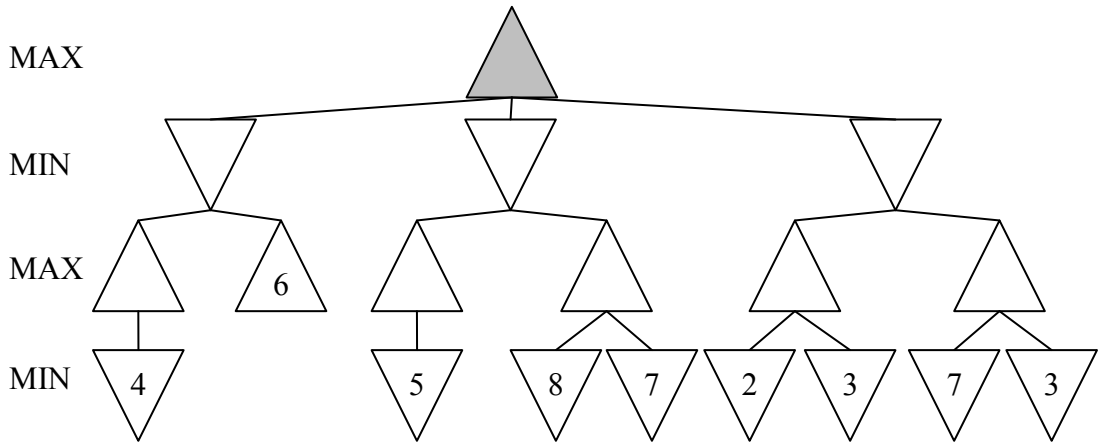
12. With the initial state being A and the goal state being H, what are the first four nodes, in order, that will be expanded using A* Search?

a) ABEH
b) ACBD
c) ADEH
d) ADGH
e) ACFD

13. Which of the following is a definition of effective branching factor?

a) The set of legal states resulting from actions applied to the current state
b) The average number of states that can be reached from any given state
c) The depth of the least-cost solution
d) The branching factor of the game tree when the successor function does not permit the generation of paths with cycles in them
e) The branching factor that a uniform tree with the depth of the solution found would have in order to contain one more than the number of nodes generated during the search

The next two questions refer to the following game tree:



14. In the game tree above, what is the MiniMax value of the initial (shaded) node?

a) 3
b) 4
c) 5
d) 6
e) 7

15. In the game tree above, how many times will a branch be pruned using alpha-beta pruning?

a) 0
b) 1
c) 2
d) 3
e) 4

16. In adversarial search, a utility function provides a value for:

a) A terminal state
b) An initial state
c) Whether the game is over
d) A MAX node
e) An intermediate state

17. Which of the following terms refers to a search to a depth where the heuristic value stops changing so much?

a) Quiescence
b) Horizon effect
c) Evaluation function
d) Cut-off
e) Alpha-beta pruning

18. An agent can be considered rational if it chooses what action to perform by using:

a) Probability theory
b) Utility theory
c) Decision theory
d) Degree of belief
e) Marginalisation

19. If Variable Y causes Variable X, which of the following statements is true?

a) X and Y are independent
b) X and Y are not independent
c) X and Y are conditionally independent
d) There is not enough information to determine the relationship between X and Y
e) None of the above

20. Which of the following is a definition of conditional probability:

a) Summing out all other variables from any joint distribution
b) The probability of a proposition given that all we know is a given fact
c) Knowledge of one variable does not affect knowledge of another variable
d) The probability of a proposition in the absence of any other information
e) None of the above

End of paper