

AI

Section Id :	64065349322
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	9
Number of Questions to be attempted :	9
Section Marks :	25
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653103733
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 55 Question Id : 640653699250 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DEGREE LEVEL : AI: SEARCH METHODS FOR PROBLEM SOLVING (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406532335039. ✓ YES

6406532335040. ✗ NO

Sub-Section Number :	2
Sub-Section Id :	640653103734
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 56 Question Id : 640653699251 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

Printed graph sheets (hard copy) will be provided for registered candidates only.



Options :

6406532335041. ✓ Printed graph sheets were provided to me.

6406532335042. ✗ Printed graph sheets were not provided to me.

6406532335043.

✖ I did not use graph sheets.

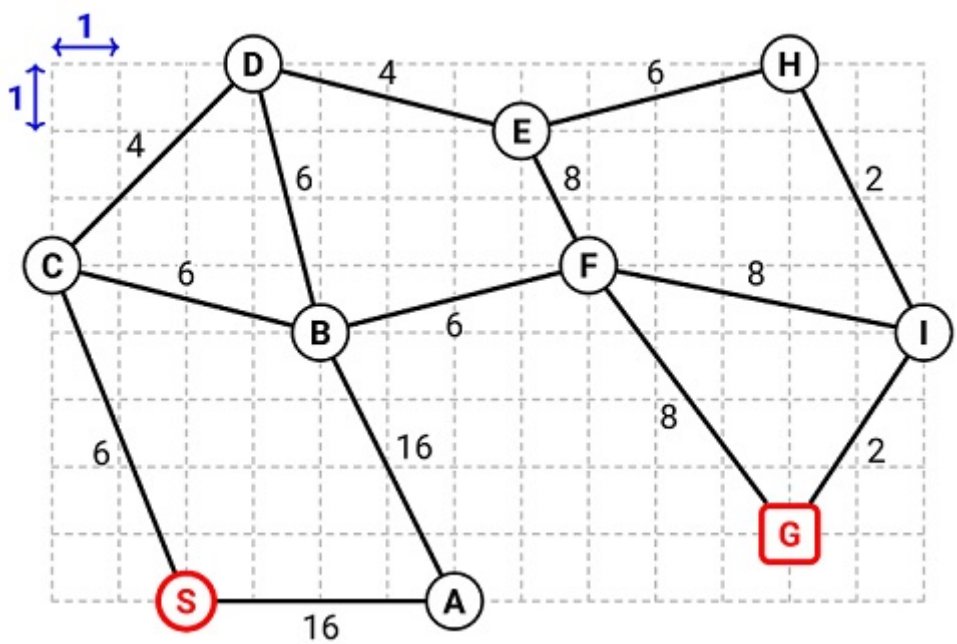
Sub-Section Number :	3
Sub-Section Id :	640653103735
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653699252 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (57 to 61)

Question Label : Comprehension

SEARCH

The figure shows a map on a uniform grid where each tile is 1x1 in size.
The start node is S and the goal node is G.
The MoveGen function returns nodes in alphabetical order.
Use Manhattan Distance as the heuristic function.
Tie-breaker: If several nodes have the same cost, use node labels to break the tie.



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 57 Question Id : 640653699253 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

What is the path found by the Best First Search algorithm? Enter the path as a comma separated list of node labels.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: S,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,A,B,F,G

Question Number : 58 Question Id : 640653699254 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

What is the path found by A* search algorithm? Enter the path as a comma separated list of node labels.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: S,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,C,B,F,G

Question Number : 59 **Question Id :** 640653699255 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

What is the path found by Branch-and-Bound search algorithm? Enter the path as a comma separated list of node labels.

Use the Branch-and-Bound variation that avoids cyclic expansions like S,A,S,A,S,A,...

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: S,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,C,D,E,H,I,G

Question Number : 60 **Question Id :** 640653699256 **Question Type :** MCQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Multiple Choice Question

For the given map, which algorithm finds the shortest path from S to G?

Options :

6406532335047. ✖ A* Search Algorithm

6406532335048. ✔ Branch-and-Bound Search Algorithm

6406532335049. ✖ None of these

Question Number : 61 Question Id : 640653699257 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

What can you say about the heuristic function for the given graph?

Options :

6406532335050. ✖ Admissible

6406532335051. ✔ Inadmissible

6406532335052. ✖ Partly admissible and partly inadmissible

6406532335053. ✖ Cannot be determined

Sub-Section Number : 4

Sub-Section Id : 640653103736

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653699258 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (62 to 65)

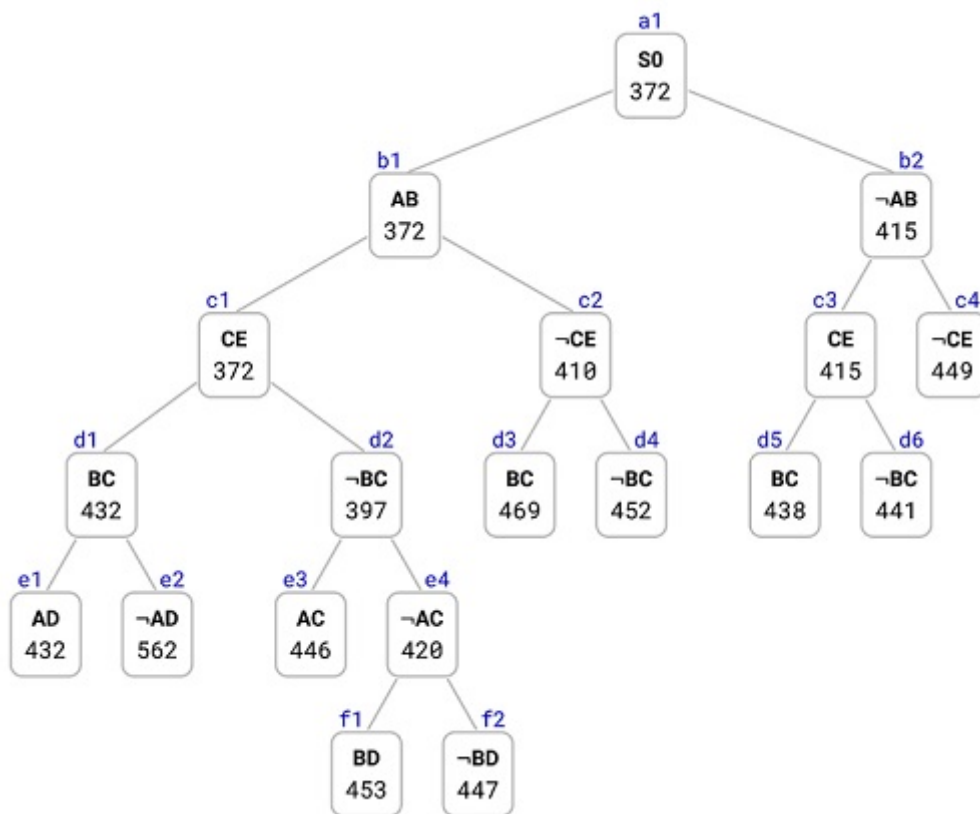
Question Label : Comprehension

TSP Branch-and-Bound

The TSP Branch-and-Bound algorithm is solving a TSP instance where the cities are A, B, C, and so on. The Branch-and-Bound search tree at the time when the algorithm has discovered the optimal tour is shown below.

Each node in the search tree displays an edge (either XY or \neg XY), a cost value, and a unique reference number (a1, b1, b2, ..., c1, ..., d1, ..., E2, ..., f1, f2). Use the reference numbers to break ties. When required, enter the reference numbers in short answers.

What information can you glean from the search tree? Answer the sub-questions based on the information gleaned from the search tree.



Sub questions

Question Number : 62 Question Id : 640653699259 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Let S0 (ref. no. a1) be the first node to be refined, identify the next 4 nodes (2nd to 5th node) that

are refined by the TSP Branch-and-Bound algorithm. Enter the nodes (node reference numbers) in the order they are refined.

Enter a comma separated list of node reference numbers.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: a9,b9,c9,d9

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

b1,c1,d2,c2

Question Number : 63 **Question Id :** 640653699260 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

Which node represents the optimal tour and what is the cost of the optimal tour? Enter the node reference number and the tour cost in the text box, or enter NIL if it is not possible to determine the optimal tour.

Enter a node reference number followed by tour cost, separated by comma.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: a9,42

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

e1,432

Question Number : 64 Question Id : 640653699261 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Determine the number of cities in the TSP instance. Enter the number of cities in the text box, or enter NIL if it is not possible to determine the number of cities.

Enter an integer.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: 42

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Question Number : 65 Question Id : 640653699262 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Start from city A, what is the path representation of the optimal tour? Enter the path representation in the text box, or enter NIL if it is not possible to determine the optimal tour.

Enter a comma separated list of cities (city labels).

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: A,B,C

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Set

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

A,B,C,E,F,D

A,D,F,E,C,B

Question Id : 640653699263 **Question Type :** COMPREHENSION **Sub Question Shuffling**

Allowed : No **Group Comprehension Questions :** No **Question Pattern Type :** NonMatrix

Calculator : None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Question Numbers : (66 to 69)

Question Label : Comprehension

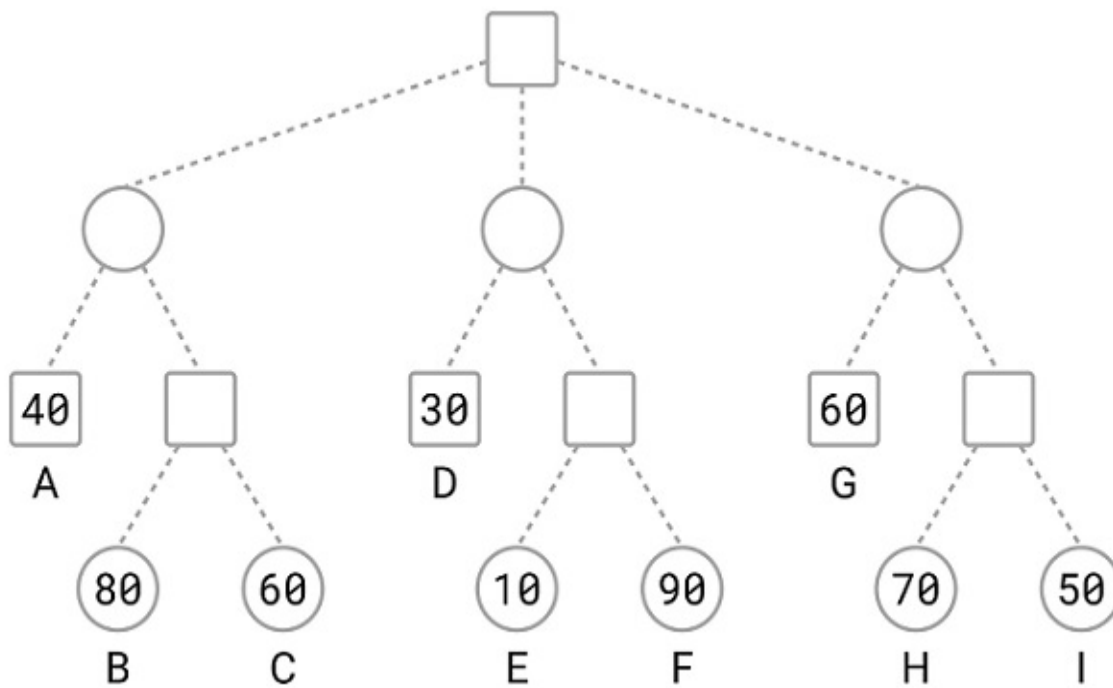
GAMES

The figure shows a game tree with evaluation function values at the horizon nodes.

The horizon nodes are labeled from A to I.

Use these labels to enter a horizon node or a list of horizon nodes in short answers (textbox).

Tie-breaker: when several nodes carry the same best cost then select the deepest node, if tie persists then select the leftmost of the deepest nodes to break the tie.



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 66 Question Id : 640653699264 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following is a strategy for the MAX player?

Options :

6406532335058. ✖ A,B,C

6406532335059. ✔ A,B

6406532335060. ✖ A,D,G

6406532335061. ✖ G,H,I

Question Number : 67 Question Id : 640653699265 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

List the horizon nodes in the best strategy for MAX. Enter the node labels in alphabetical order.

Enter a comma separated list of node labels in alphabetical order.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

G,H

Question Number : 68 Question Id : 640653699266 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

List the horizon nodes pruned by Alpha-Beta.

Enter a comma separated list of node labels in alphabetical order.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

C,E,F,I

Question Number : 69 Question Id : 640653699267 Question Type : SA Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1

Question Label : Short Answer Question

List the horizon nodes not processed (neither LIVE nor SOLVED) by SSS*.

Enter a comma separated list of node labels in alphabetical order.
NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

B,C,E,F,I

Sub-Section Number :	5
Sub-Section Id :	640653103737
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653699268 Question Type : COMPREHENSION Sub Question Shuffling
Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix
Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (70 to 72)

Question Label : Comprehension

PROBLEM DECOMPOSITION

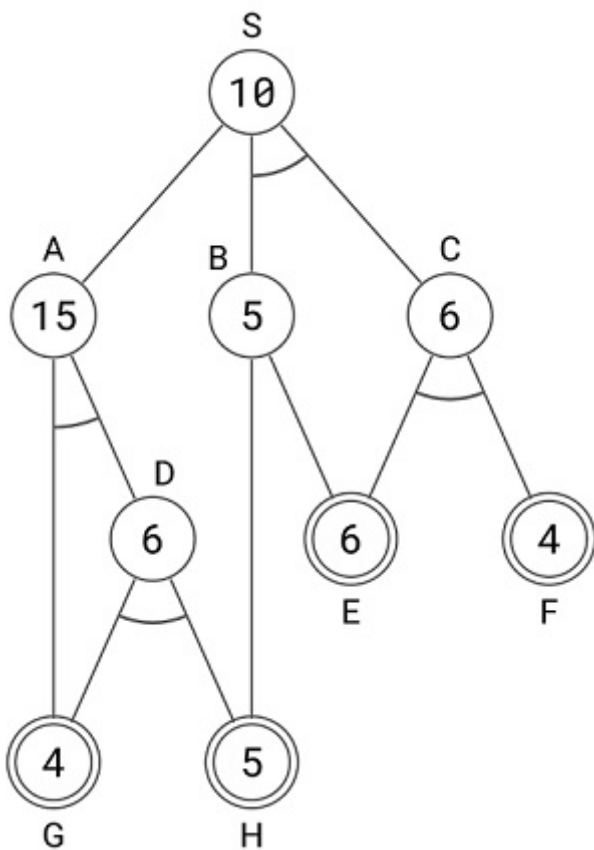
The figure shows an AND-OR graph that depicts how a problem S can be decomposed into one or more smaller problems. Nodes are uniquely identified by labels (S, A, B, ...). The number in each node is the heuristic estimate of the cost of solving that node.

Nodes shown in double lines are primitive nodes and their values are actual costs. Observe that a primitive node is added to the graph by its parent when the parent is expanded, and the primitive node is labeled as SOLVED and it will not be expanded subsequently.

The cost of each edge is 1 unit.

Tie-breaker 1: If several nodes have the same cost then break the tie using node labels.

Tie-breaker 2: For AND nodes, select the unsolved branch with the highest cost.



Use AO* algorithm to solve S, then answer the given subquestions.

Sub questions

Question Number : 70 Question Id : 640653699269 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

List the first three nodes (including S) expanded by AO* algorithm. List the nodes in the order they are expanded. Observe that primitive nodes are not expanded.

Enter a comma separated list of node labels.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Set

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,C,A

C,A,D

Question Number : 71 Question Id : 640653699270 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Determine the value of the start node S after each node is expanded. What are the values of S after the 1st, 2nd and 3rd nodes are expanded, respectively? Enter the 3 values in the textbox.

Enter a comma separated list of numbers.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: 12,42,17

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Set

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

13,16,13

16,13,18

Question Number : 72 **Question Id :** 640653699271 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

What is the final value of the start node S?

Enter a number.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: 42

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

18

Question Id : 640653699272 **Question Type :** COMPREHENSION **Sub Question Shuffling**

Allowed : No **Group Comprehension Questions :** No **Question Pattern Type :** NonMatrix

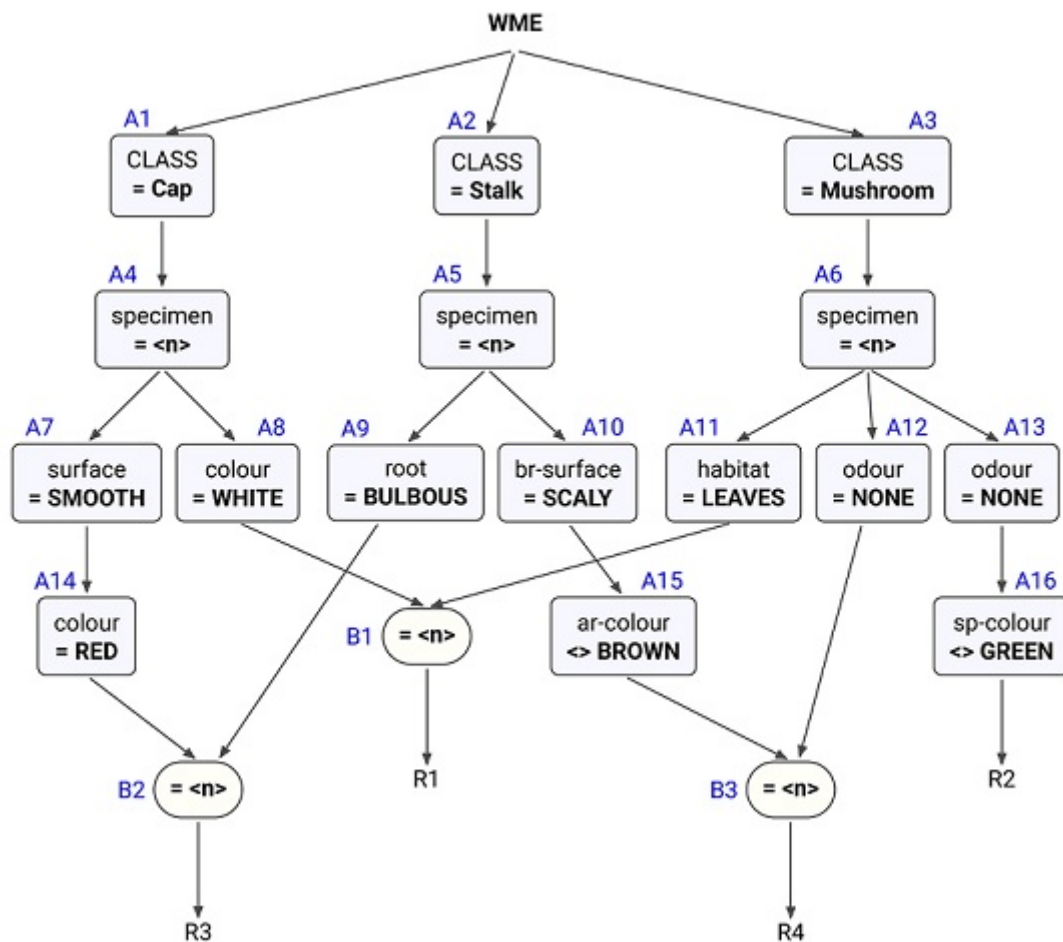
Calculator : None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Question Numbers : (73 to 75)

Question Label : Comprehension

RULE BASED EXPERT SYSTEMS

A part of the Rete Net that classifies mushrooms (as edible or poisonous) is shown in the figure. The labels A1, A2, ..., A10, A16, ..., B1, B2, B3, R1, ..., R4 uniquely identify the nodes in the network. When required, use the above label ordering to **break ties** and to enter short answers.



Run the Rete algorithm for the Working Memory shown below, the WMEs are in timestamp order. Assume that WMEs reside at appropriate Alpha nodes, and the Beta nodes point to WMEs residing in Alpha nodes.

- 201. (Mushroom ^specimen B43 ^odour ALMOND ^sp-colour BROWN)
- 202. (Stalk ^specimen B43 ^br-surface SMOOTH)
- 203. (Mushroom ^specimen K13 ^odour NONE ^habitat LEAVES)
- 204. (Cap ^specimen A23 ^colour RED ^surface SMOOTH)
- 205. (Mushroom ^specimen B37 ^odour NONE ^habitat LEAVES)
- 206. (Cap ^specimen B37 ^colour WHITE ^surface SMOOTH)
- 207. (Stalk ^specimen A23 ^root BULBOUS ^ar-colour WHITE)
- 208. (Stalk ^specimen K13 ^br-surface SCALY ^ar-colour WHITE)
- 209. (Mushroom ^specimen A23 ^odour NONE ^sp-colour WHITE)

For each WME identify its location (node label) in the Rete Net, and prepare the conflict set for the first cycle, then answer the given subquestions.

Sub questions

Question Number : 73 Question Id : 640653699273 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following rule-data tuples are in the conflict-set?

Options :

6406532335068. ✓ R1,205,206

6406532335069. ✓ R2,209

6406532335070. ✓ R3,204,207

6406532335071. ✓ R4,203,208

6406532335072. ✗ R1,203,206

6406532335073. ✗ R4,205,208

Question Number : 74 Question Id : 640653699274 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

If the Inference Engine uses **Specificity** as the conflict resolution strategy then which of the following rule-data tuples will qualify?

Options :

6406532335074. ✖ R1,205,206

6406532335075. ✖ R2,209

6406532335076. ✔ R3,204,207

6406532335077. ✔ R4,203,208

6406532335078. ✖ R1,203,206

6406532335079. ✖ R4,205,208

Question Number : 75 Question Id : 640653699275 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

If the Inference Engine uses **Recency** as the conflict resolution strategy then which of the following rule-data tuples will qualify?

Options :

6406532335080. ✖ R1,205,206

6406532335081. ✔ R2,209

6406532335082. ✖ R3,204,207

6406532335083. ✖ R4,203,208

6406532335084. ✖ R1,203,206

6406532335085. ✖ R4,205,208

Sub-Section Number :	6
Sub-Section Id :	640653103738
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653699276 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (76 to 79)

Question Label : Comprehension

AUTOMATED PLANNING

The domain description of a Blocks World with a single one-armed robot is given below.

PREDICATES

armEmpty	The arm is not holding any block, it is empty.
holding(X)	The arm is holding X.
onTable(X)	X is on the table.
clear(X)	X has nothing above it, it is clear.
on(X,Y)	X is directly placed on Y.

OPERATORS

Pickup(X): pick up X from the table.

Preconditions: { armEmpty, clear(X), onTable(X) }
Add Effects : { holding(X) }
Del Effects : { armEmpty, onTable(X) }

Putdown(X): place X on the table.

Preconditions: { holding(X) }
Add Effects : { armEmpty, onTable(X) }
Del Effects : { holding(X) }

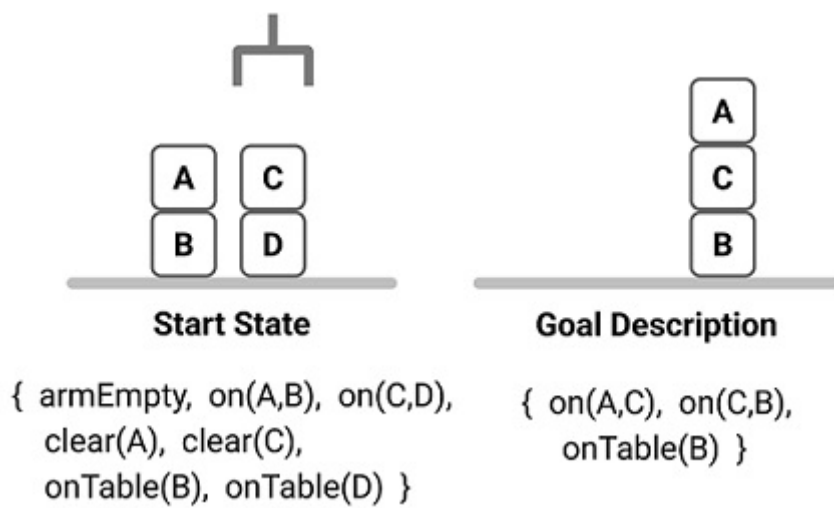
Unstack(X,Y): pick up X that is directly sitting on Y.

Preconditions: { armEmpty, clear(X), on(X,Y) }
Add Effects : { clear(Y), holding(X) }
Del Effects : { armempty, on(X,Y) }

Stack(X,Y): place X directly on top of Y.

Preconditions: { holding(X), clear(Y) }
Add Effects : { armEmpty, on(X,Y) }
Del Effects : { holding(X), clear(Y) }

Consider the planning problem with the following start state and goal description.



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 76 Question Id : 640653699277 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following are **applicable** actions in the start state?

Options :

6406532335086. ✓ Unstack (A,B)

6406532335087. ✓ Unstack (C,D)

6406532335088. ✗ Putdown (B)

6406532335089. ✗ Stack (C,B)

6406532335090. ✗ Stack (A,C)

Question Number : 77 Question Id : 640653699278 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following are **relevant** actions in the goal state?

Options :

6406532335091. ✖ Unstack (A,B)

6406532335092. ✖ Unstack (C,D)

6406532335093. ✔ Putdown (B)

6406532335094. ✔ Stack (C,B)

6406532335095. ✔ Stack (A,C)

Question Number : 78 Question Id : 640653699279 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

In the planning graph, which of the following are mutex action pairs in Layer 1?

Options :

6406532335096. ✔ Unstack(A,B), Unstack(C,D)

6406532335097. ✔ Unstack(C,D), NOP-ACTION for armEmpty

6406532335098. ✔ Unstack(A,B), NOP-ACTION for on(A,B)

6406532335099. ✖ Putdown(B), Stack(C,B)

6406532335100. ✖ Stack(A,C), Stack(C,B)

Question Number : 79 Question Id : 640653699280 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

In the planning graph, which of the following are mutex proposition pairs in Layer 1?

Options :

6406532335101. ✓ clear (B), armEmpty

6406532335102. ✓ holding (A), clear (D)

6406532335103. ✗ armEmpty, on (A,B)

6406532335104. ✗ on (A,B), on (C,D)

Sub-Section Number :	7
Sub-Section Id :	640653103739
Question Shuffling Allowed :	No
Is Section Default? :	null

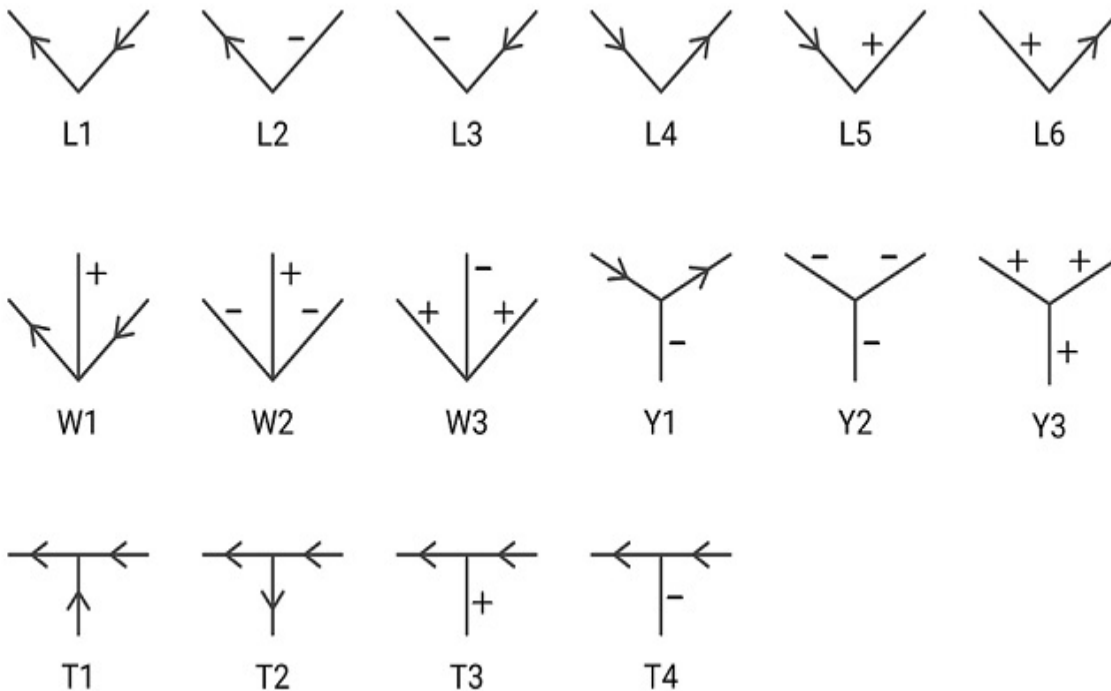
Question Id : 640653699281 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (80 to 81)

Question Label : Comprehension

CONSTRAINT SATISFACTION

The set of junctions (L, W, Y and T type junctions) that occur in a 2D line drawing of trihedral objects is provided below. The in-plane clockwise/counterclockwise rotations of these junctions are valid as well. These junctions provide constraints on the possible edge assignments (convex, concave, arrow) for the edges/lines in 2D line drawings of trihedral objects.

The junctions carry unique labels: L1, L2, L3, L4, L5, L6, T1, T2, T3, T4, W1, W2, W3, Y1, Y2, Y3. When required, use the labels in short answers.



Note: A 2D line drawing of trihedral objects is considered to be consistent if all the edges and junctions can be assigned labels that are consistent with each other, otherwise the drawing is considered to be inconsistent and all labels are reset to NIL.

Apply a suitable algorithm to assign consistent labels to edges/junctions in the 2D line drawings in the sub-questions. Choose a suitable edge and junction order for solving the problems.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 80 Question Id : 640653699282 Question Type : SA Calculator : None

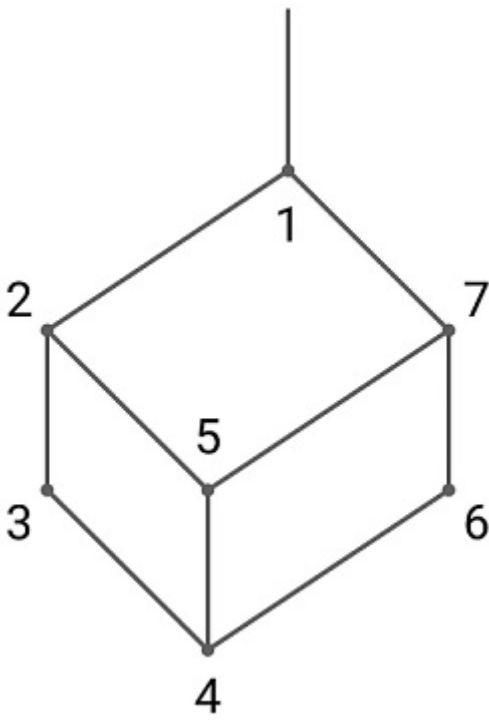
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Assign consistent labels to all the edges and junctions in the 2D line drawing shown below.

Enter the labels of the junctions 1, 2, 3, 4 in the text box, in that order. Otherwise enter NIL if the drawing has no consistent label assignment.



Enter a comma separated list of junction labels, or enter NIL.

NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: X9,Y9,Z9,W9

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Set

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

Y1,W1,L1,W1

Y1,W2,L2,W1

Y2,W1,L2,W1

Question Number : 81 **Question Id :** 640653699283 **Question Type :** SA **Calculator :** None

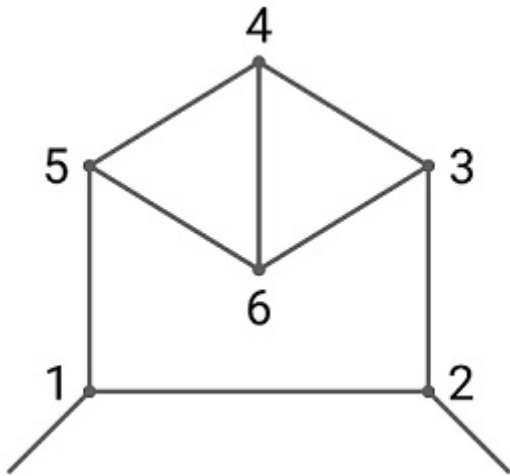
Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

Assign consistent labels to all the edges and junctions in the 2D line drawing shown below.

Enter the labels of the junctions 1, 2, 3, 4 in the text box, in that order. Otherwise enter NIL if the drawing has no consistent label assignment.



Enter a comma separated list of junction labels, or enter NIL.
NO SPACES, TABS, DOTS, BRACKETS OR EXTRANEIOUS CHARACTERS.

Answer format: X9,Y9,Z9,W9

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

NIL