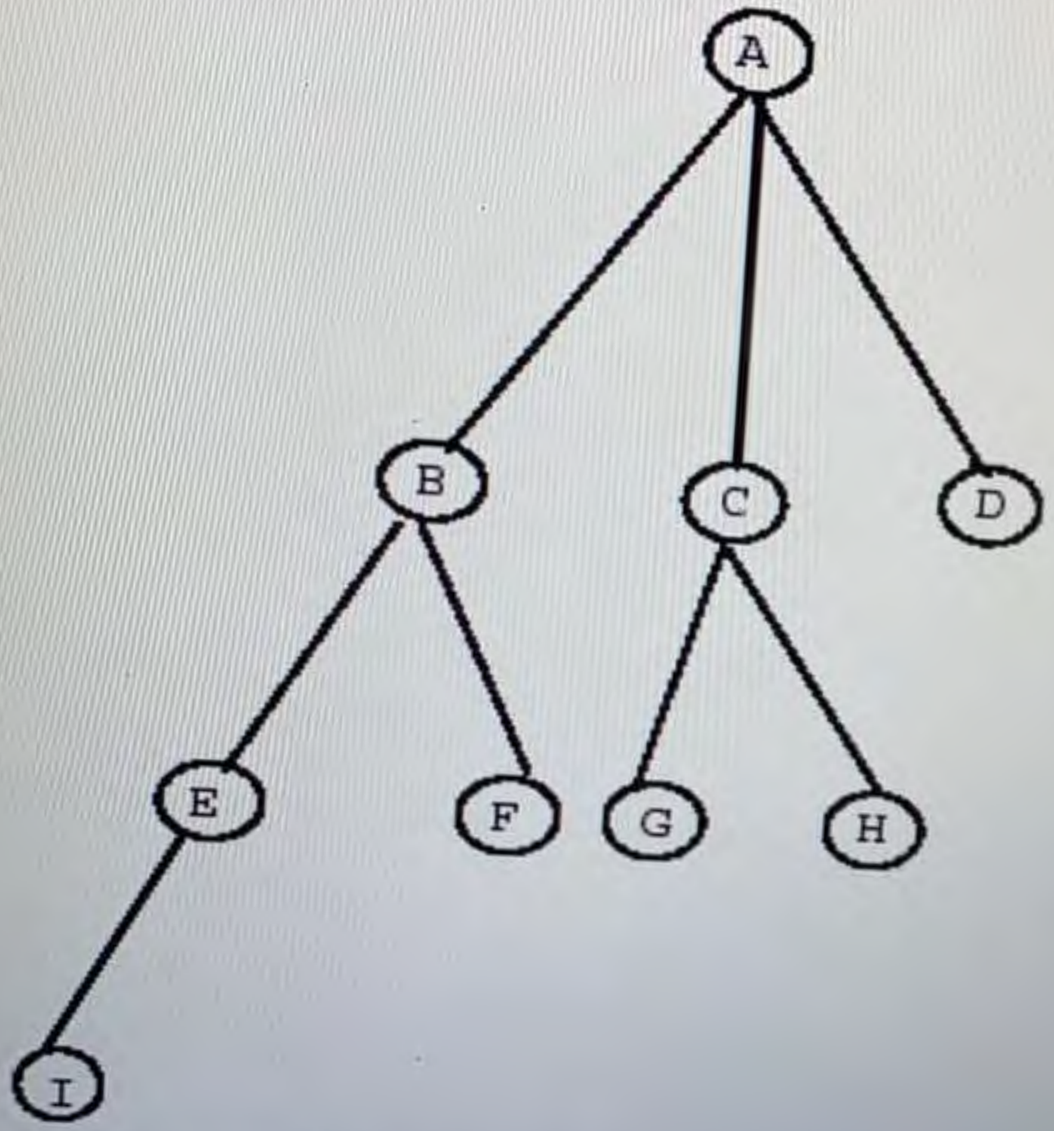
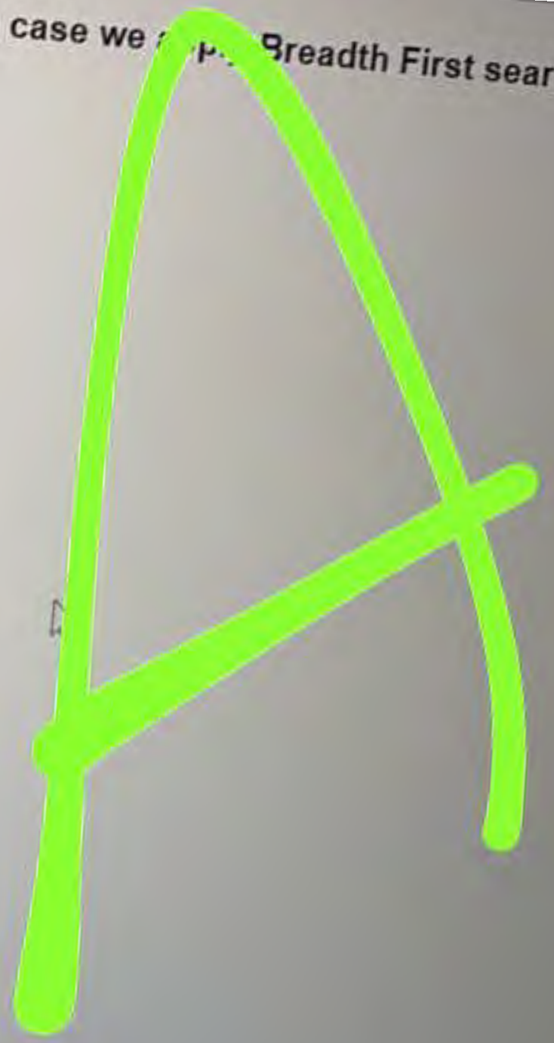
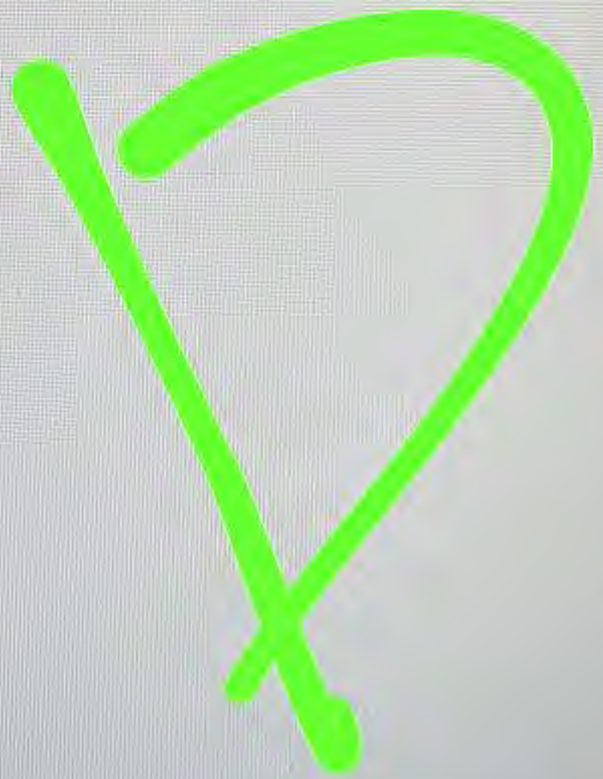
Complete traverse path (states order) for the following tree in case we apply Breadth First search





Which of the following is legitimate predicate calculus symbol

- EM!!!
- 4&E
- &
- EM2



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Question 1 of 19

In Depth first search ..... is maintained as a queue, or last-in first-out(LIFO) data structure

- Close lists
- Open lists
- New state lists
- Dead end list

⚠ Moving to the next question prevents changes to this answer.

The two most fundamental concerns of AI researchers are

- Knowledge representation and search
- Knowledge representation and planning
- Automated reasoning and search
- Games and planning

⚠ Moving to the next question prevents changes to this answer.

Unify the Following: p(a,b) and p(X,X)

- ○ p(X,b)
- ○ p(a,X)
- ○ p(a,b)
- ○ Failure

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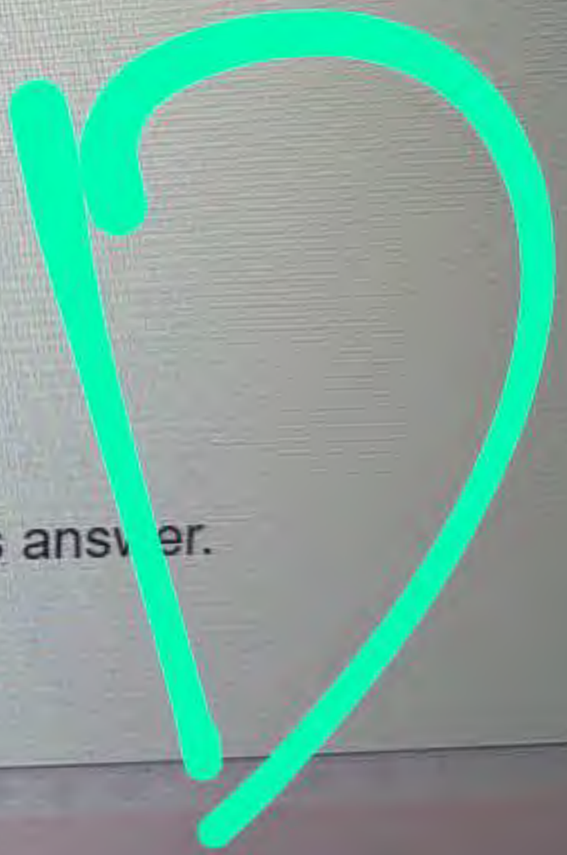


The example below is .....

You can't log into the network.

If you have a current password, then you can log into the network.

Therefore, you don't have a current password

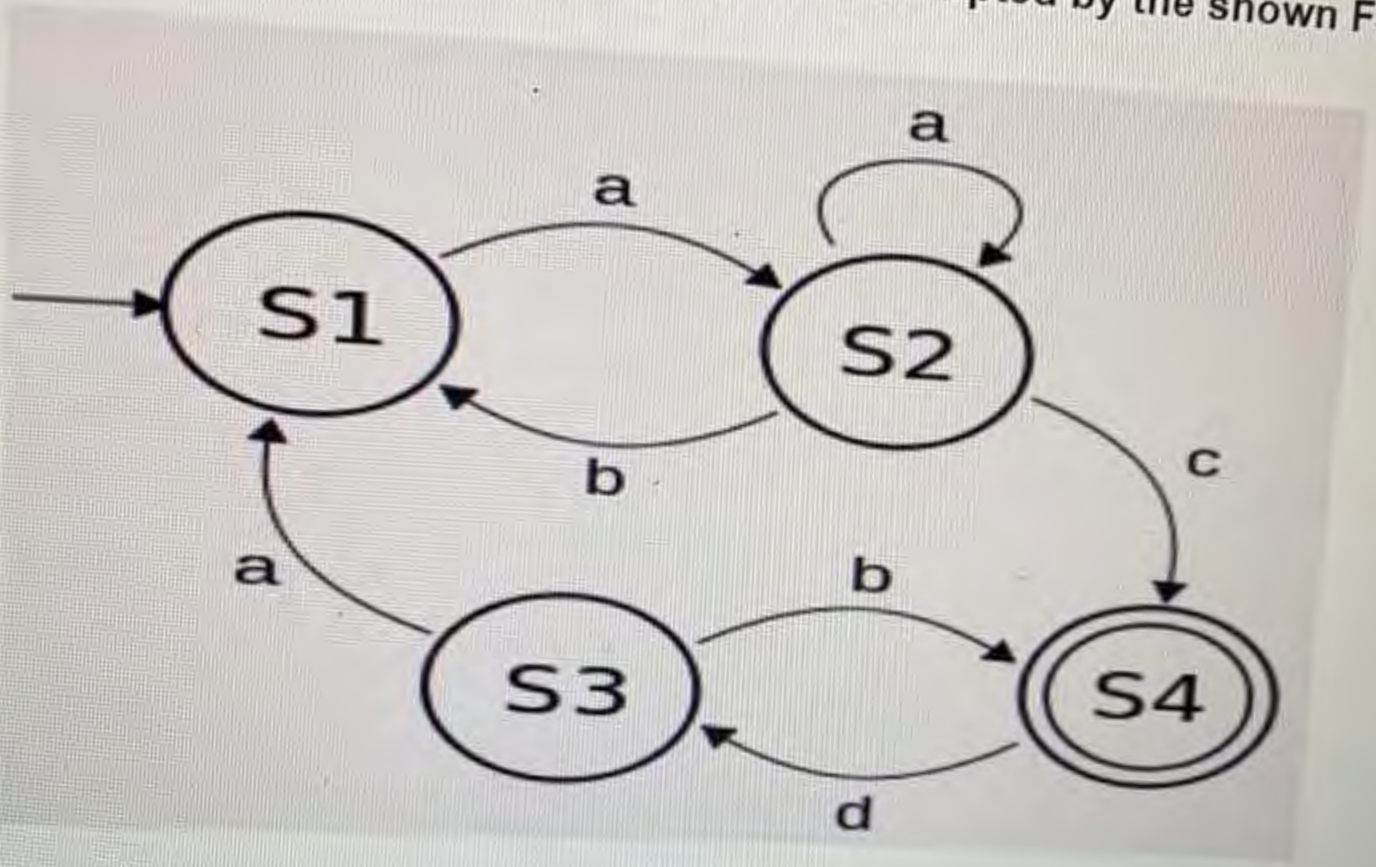
- Modus tollens
- Introduction
- Elimination
- Modus ponens

Computer system that can act like or simulate the functioning of the human brain is

- Planning
- Robotics
- Machine Learning
- Neural Nets and Genetic Algorithms

⚠ Moving to the next question prevents changes to this answer.

Which of these inputs are valid (will be accepted by the shown FSM):



- acdbd
- abababaacdaac
- ababacdaaab
- abcadbc

Which of the following statements is NOT correct about Prolog programming language?

- It has automatic backtracking
- Uses functions
- Programming in small pieces
- Use linked lists and recursion

Moving to the next question prevents changes to this answer.

.....In the expressions of the form P ∨ Q, P and Q are called the

- Disjuncts
- Negation
- Conjuncts
- Implication

⚠ Moving to the next question prevents changes to this answer.

following: ancestor(X,Y) and ancestor(bill, father(bill))

- bill / father , father(X) / Y
- bill / X
- Can not be unified
- bill / X , father(bill) / Y

⚠ Moving to the next question prevents changes to this answer.

Provides systems the ability to automatically learn and improve from experience without being explicitly program

- Machine Learning
- Lisp and Prolog
- Neural Nets and Genetic Algorithms
- Robotics

⚠ Moving to the next question prevents changes to this answer.

For propositional expressions P, Q and R, the law below is:

$P \wedge (Q \vee R) \equiv (P \wedge Q) \vee (P \wedge R)$

- ○ The Associative law
- ○ De Morgans laws
- ○ The Commutative law
- ○ The Distributive law

⚠ Moving to the next question prevents changes to this answer.

A finite state machine (FSM) is

- ○ A finite, undirected, connected graph
- ○ An infinite, directed, connected graph
- ○ An infinite, undirected, connected graph
- ○ A finite, directed, connected graph

⚠ Moving to the next question prevents changes to this answer.

The following Predicate Logic is translated into simple English sentences:

∃x (BIRD(x) & SING(x)

T T T Arial 3 (12pt)

Some Birds sing

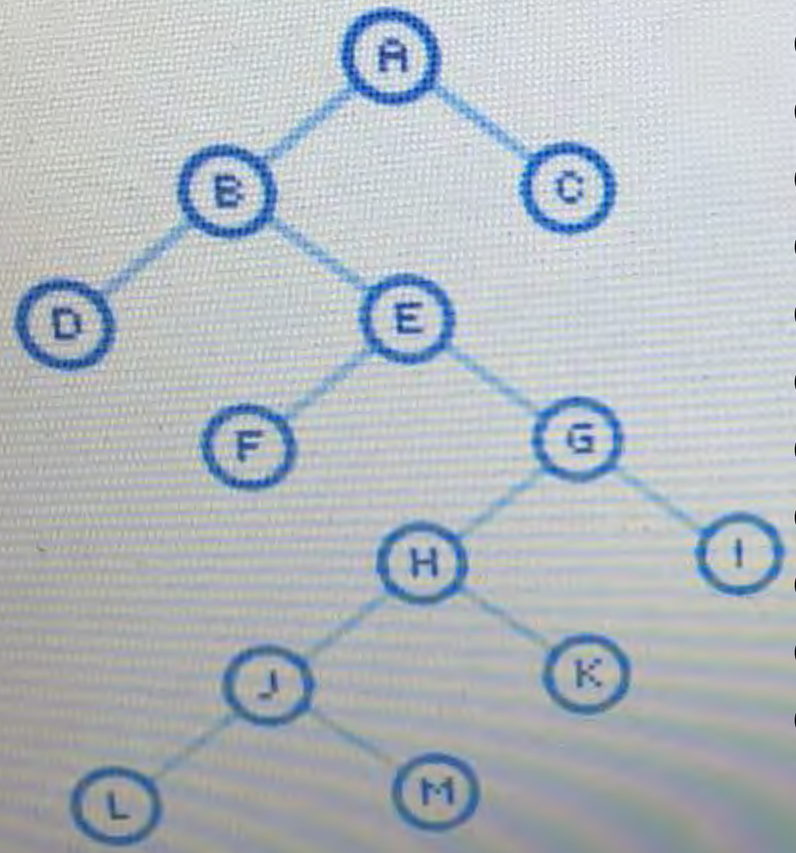
Path: p

⚠ Moving to the next question prevents changes to this answer.

ENG

3 points Save Answer

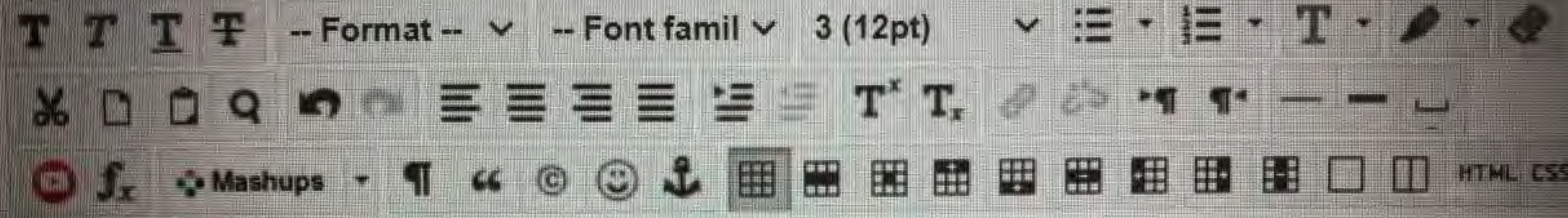
Show the complete trace of **Depth First Search** (DFS) for the following tree to reach **goal K** from **root A**. Where your trace must show ***the open and close lists.***



open = [A];closed=[]
open = [B,C];closed=[A]
open = [D,E,C];closed=[B,A]
open = [E,C];closed=[D,B,A]
open = [F,G,C];closed=[E,D,B,A]
open = [G,C];closed=[F,E,D,B,A]
open = [H,I,C];closed=[G,F,E,D,B,A]
open = [J,K,I,C];closed=[H,G,F,E,D,B,A]
open = [L,M,K,I,C];closed=[J,H,G,F,E,D,B,A]
open = [M,K,I,C];closed=[L,J,H,G,F,E,D,B,A]
open = [K,I,C];closed=[M,L,J,H,G,F,E,D,B,A]
open = [I,C];closed=[K,M,L,J,H,G,F,E,D,B,A]

Note: you can insert a table

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).



P	Q	(P→Q)	¬P	¬Q	(¬Q→¬P)	(P→Q) ≡ (¬Q → ¬P)
T	T	T	F	F	T	T
T	F	F	F	T	F	T
F	T	T	T	F	T	T
F	F	T	T	T	T	T

Path: table » tbody » tr » td » span

Prove with reasoning the following logically formula whether $(P \rightarrow Q) \equiv (\neg Q \rightarrow \neg P)$

Note: you can insert a table

T T T Arial 3 (12pt) T

الجواب في الصورة اللي قبل فيها جدول

Path: p

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Question 17

The following simple English sentences is translated into Predicate Logic:

For every person x, there is at least one person y such that x loves y

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph Arial 3 (12pt) Mashups

$\forall$person(x)==>$\exists$y (person(y) ^ loves(x,y))

Path: p

Moving to the next question prevents changes to this answer.

Question 2

If given the node state and goal state below for 8-Puzzle Problem, what is the sum of tiles out of the place?

5		8
4	2	1
7	3	6

Node State

1	2	3
4	5	6
7	8	

Goal State

- 4
- 5
- 7
- 6

Moving to the next question prevents changes to this answer

⚠ Moving to the next question prevents changes to this answer.

Question 3

Which of the following statements is NOT correct about Some of the problems with Hill Climbing search

- May terminate in a local maxima
- Does not backtrack
- Can always find the optimum solution
- Does not look ahead of the immediate neighbors of the current state

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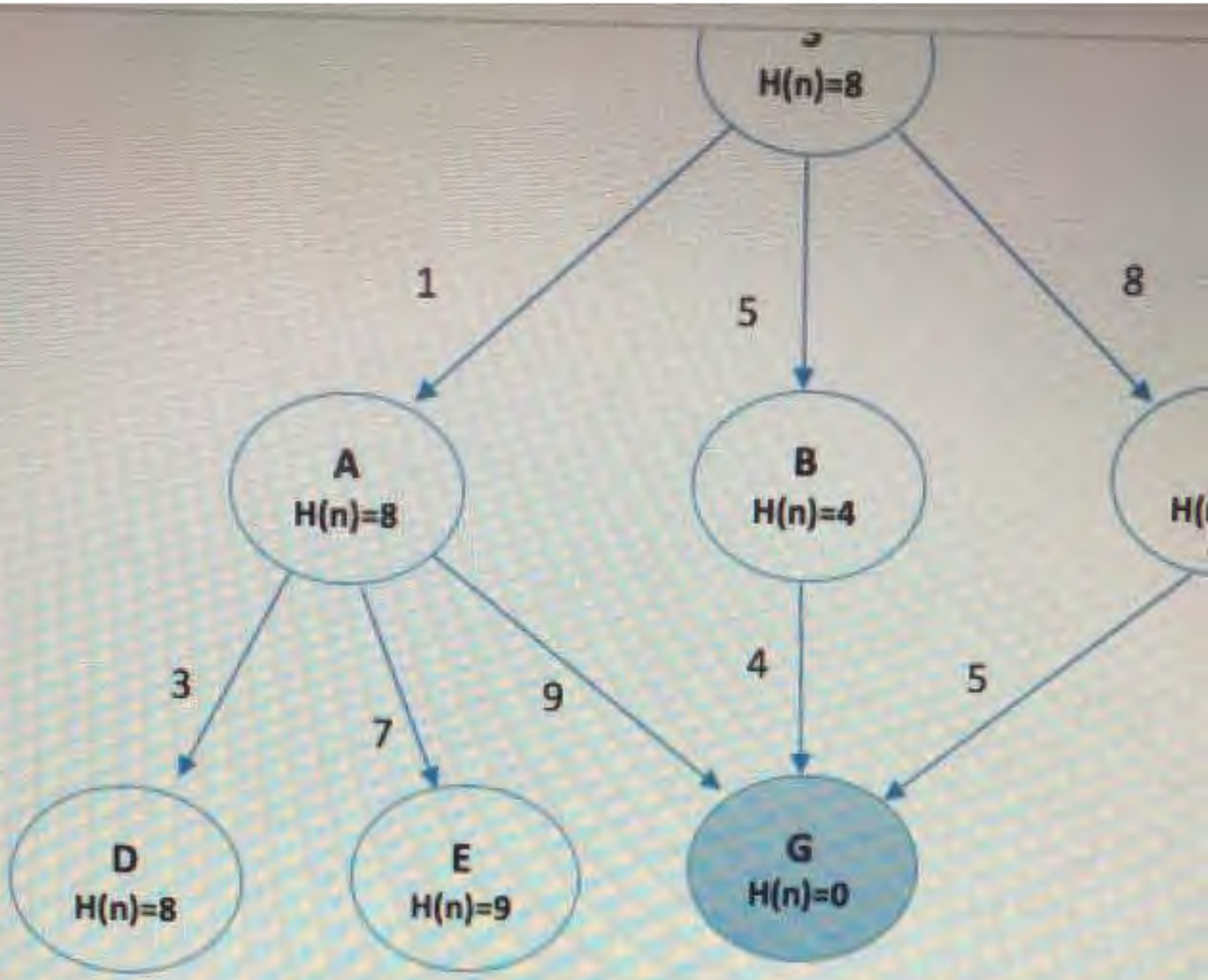

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1) S-C-G

2) cost is 13

Path: p

Click **Submit** to complete this assessment.

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Question 1

Heuristic search is called informed search because:

- It can not find a solution all the time
- It searches the problem blindly by traversing all nodes.
- It uses information about the problem.
- It performs a backtracking algorithm.

C

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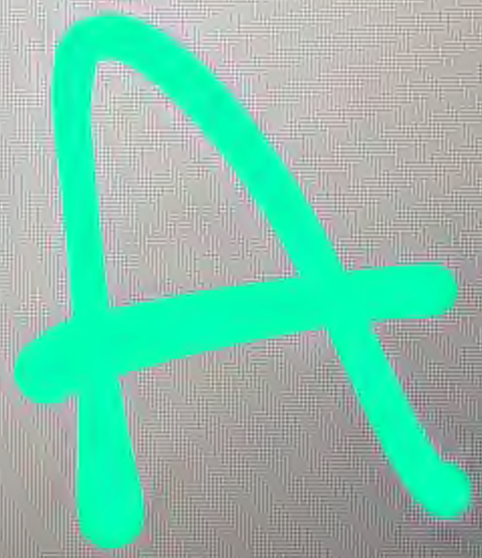
⚠ Moving to the next question prevents changes to this answer.

Question 1

Order of elements is important (does matter) in:

- ○ Permutations
- ○ Combinations
- ○ Repetition
- ○ Counting

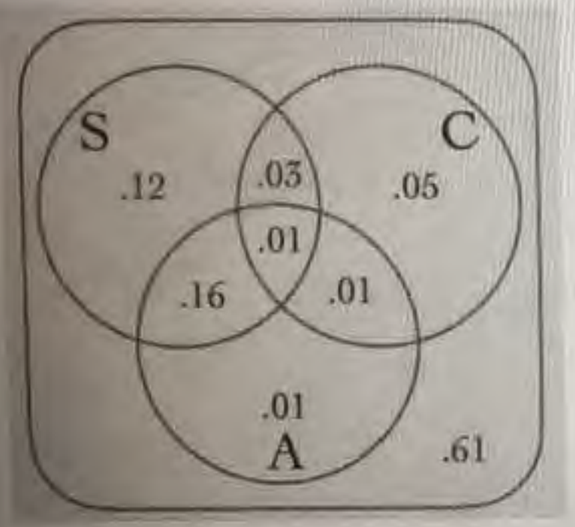


Question 3

0.5 points Save

Using the Venn diagram representation of the probability distributions of the Accident (A), Construction (C), and Slow traffic (S), What is the probability of the there is no accident and there being traffic slowing down and construction

$\bar{A} \cup S \cup C$



- 0.16
- 0.12
- 0.03
- 0.01

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Question 4

For the evaluation function f(n), h(n) is defined as .....

- Path from the state at node n to a goal state
- Path from the start node to the goal state
- Path from the start node to the state at node n
- Path between any two states

A

Question Completion Status:

⚠ Moving to the next question prevents changes to this answer

Question 2

Suppose the fire department mandates that all fire fighters must weigh between 150 and 250 pounds. The weight of a fire fighter would be an example of a:

- Boolean random variable
- String
- Continuous random variable
- Discrete random variable

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Moving to the next question prevents changes to this answer.

Question 6

If given the node state and goal state below for 8-Puzzle Problem, what is the sum of distances out of the place?

6	2	3
8		4
7	1	5

Node State

1	2	3
8		4
7	6	5

Goal State

1

2

4

6

5

Moving to the next question prevents changes to this answer.

Question 7

Let A be the set {"Cat", "Rabbits", "Dogs", "Canaries", "Birds"}.

Let B be the set {"Dogs", "Canaries", "Birds", "Ostriches", "Horses"}.

Which of the following statements is NOT correct about A and B:

- $|A \cup B| = 7$
- $A \cap B = \{\text{"Dogs"}, \text{"Canaries"}, \text{"Birds"}\}$.
- $|A \cap B| = 5$
- $A \cup B = \{\text{"Cat"}, \text{"Rabbits"}, \text{"Dogs"}, \text{"Canaries"}, \text{"Birds"}, \text{"Ostriches"}, \text{"Horses"}\}$.

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⚠ Moving to the next question prevents changes to this answer.

Question 8

In a horse-racing event, there are 10 horses competing for the top three places. Find the permutations for the top three horses

- 27
- 720
- 37
- 120

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Moving to the next question prevents changes to this answer.

Question 9

Which of the following statements is NOT correct about BEST-FS Properties?

- Optimal
- Not Complete
- Complete
- Not Optimal

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Question 5

How many ways can 5 people sit on a park bench if the bench can only seat 2 people?

[Hint: The order of the arrangements matters].

- 60
- 20
- 10
- 120

B

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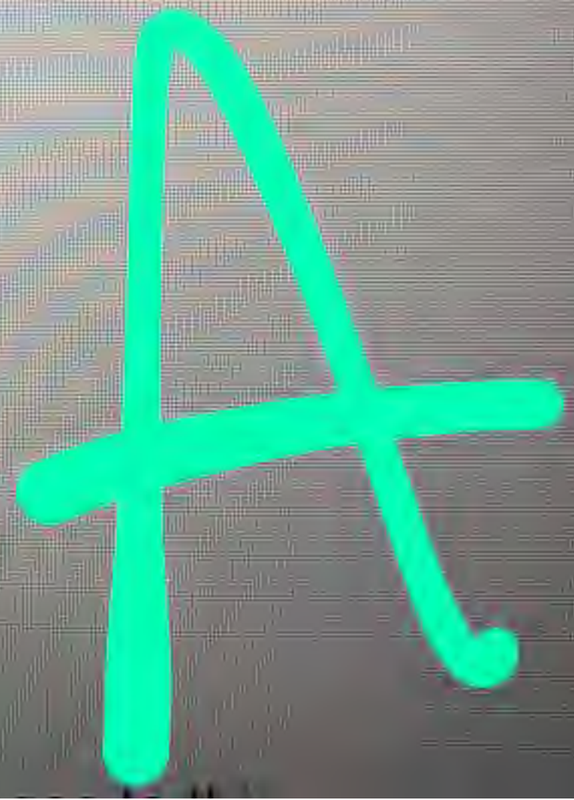
⚠ Moving to the next question prevents changes to this answer.

Question 11

Which of the following statements is correct about heuristic search

- Uses problem-specific information
- Search the state space blindly
- Have huge search tree
- Very inefficient in most cases



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Question 12

A search algorithm is ..... if it is guaranteed to find a minimal path to a solution whenever such a path exists.

- Admissible
- Complete
- Optimal
- $g(n) \geq g^*(n)$

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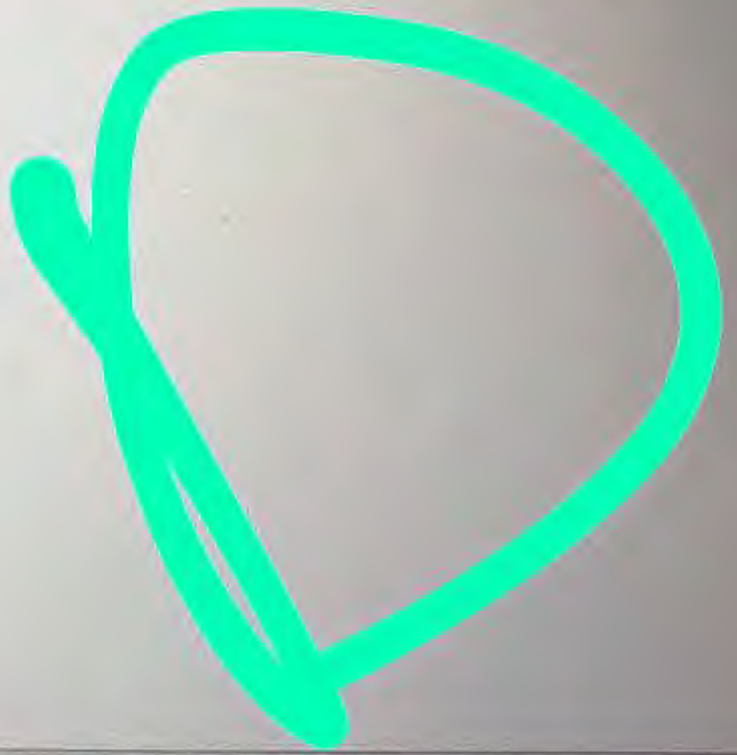
⚠ Moving to the next question prevents changes to this answer.

Question 13

The number of ways to arrange 4 objects that are chosen from a set of 8 different objects without repetition can be calculated as:

- ${}_4P_8$
- ${}_4C_8$
- ${}_8C_4$
- ${}_8P_4$



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Moving to the next question prevents changes to this answer

Question 14

0.5 points Save A

The joint probability distribution for the traffic and construction variables is shown in the following figure. Calculate the conditional probability of bad traffic T given the fact that we do have road construction C, or p(T|C) or p(T = t | C = t) ?

	C	T	p	
C is true = .5	t	t	.3	T is true = .4
	t	f	.2	
	f	t	.1	
	f	f	.4	

- 0.6
- 0.5
- 0.25
- 0.75

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Question 10

When algorithm A uses an evaluation function f in which ....., it is called algorithm A*

- $g(n) \geq g^*(n)$
- $h(n) \geq h^*(n)$
- $h(n) \leq h^*(n)$
- $g(n) \leq g^*(n)$

Moving to the next question prevents changes to this answer.

Question 16

Using the the following table, calculate the probability that there being an accident A=t.

S	C	A	P	
Traffic Slow Down	Road constructi	Accident		
t	t	t	0.01	$p(S \cap C \cap A)$
t	t	f	0.03	$p(S \cap C \cap \bar{A})$
t	f	t	0.16	$p(S \cap \bar{C} \cap A)$
t	f	f	0.12	$p(S \cap \bar{C} \cap \bar{A})$
f	t	t	0.01	$p(\bar{S} \cap C \cap A)$
f	t	f	0.06	$p(\bar{S} \cap C \cap \bar{A})$
f	f	t	0.01	$p(\bar{S} \cap \bar{C} \cap A)$
f	f	f	0.61	$p(\bar{S} \cap \bar{C} \cap \bar{A})$

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Paragraph Arial 3 (12pt) Mashups

P(A) = 0.01+0.16+0.01+0.01

P(A) = 0.19

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Question 17

2 poin

Suppose that the probability of winning a game is 1/37 (p(E)), and the probability of losing the game is 36/37. If your reward of winning is 50 SAR. And your reward of losing is 2 SAR.

The expected value of winning is:

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ex(E) = (1/37)*50 - (36/37)*2

ex(E) = -0.5946

Path: p

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⚠ Moving to the next question prevents changes to this answer

Question 15

If S = {1,2,3,4,5,6,7,8,9,10}, and A = {6,8,10}, and B = {6,7,8,9,10}, then what will be the probability of Union of two sets of events P(A U B)?

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph | Arial | 3 (12pt)

A U B = {6,7,8,9,10}

n(S) = 10

n(AUB) = 5

P(AUB) = 5/10 = 0.5

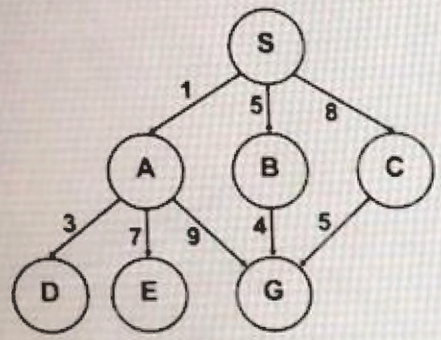
Path: p

⚠ Moving to the next question prevents changes to this answer

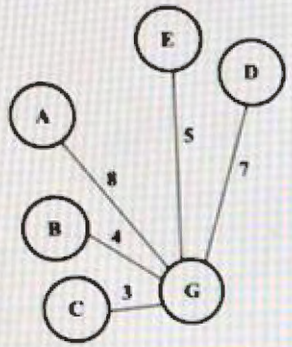
Question 18

4 points Save Answer

If given the graphs (g(n) and h(n)) below (S is root and G is goal), show the complete trace for **A* (A star) search**, where your trace must show the **open and close lists**, and show your **solution Path**.



g (n)



h(n)

f(A)=9 f(B)=9
f(C)=11 f(D)=11
f(E)=13

1. evaluate: open[S]; closed[]
2. evaluate: open[A9,B9,C11]; closed[S]
3. evaluate: open[B9,G10,D11,C11,E13]; closed[A9,S]
4. evaluate: open[G9,D11,C11,E13]; closed[B9,A9,S]
5. evaluate: open[D11,C11,E13]; closed[G9,B9,A9,S]

goal reached

path followed: S-A-B-G

Paragraph Arial 3 (12pt) Mashups

Words 0

Path: p