Question: 10 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Labels of conditional transitions are of the form $g : \alpha$ where g is a boolean condition called _____.

Choices:

- global
- gesture
- gun
- guard

Question: 11 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Labels of conditional transitions are of the form $g : \alpha$ where α is an _____.

Choices:

- action
- application
- analysis
- argument

Question: 12 (Marks: 1) Attempted Questions: 33 Total Questions: 33

The nodes of a program graph are called _____.

Choices:

- (●) edges
- ( ) notations
- ( ) locations
- ( ) elements

Question: 11 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Labels of conditional transitions are of the form $g : \alpha$ where α is an _____.

Choices:

- action
- application
- analysis
- argument

Question: 17 (Marks: 1) Attempted Questions: 16 Total Questions: 33

If Non-Deterministic Finite Automata (NFA) of 6 states excluding the initial state is converted into DFA, then maximum possible number of states for the DFA are _____.

Choices:

- 76
- 64
- 32
- 128

Question: 18 (Marks: 1) Attempted Questions: 17 Total Questions: 33

Transition System (TS) is called finite if _____.

Choices:

- S, Act, and AP are finite
- labeling function is finite
- S, I, and L are finite
- only S is finite

Question: 28 (Marks: 3) Attempted Questions: 27 Total Questions: 33

How many tokens are required at each input place to fire a transition?

.....

Answer:

.....

Question: 33 (Marks: 5) Attempted Questions: 29 Total Questions: 33

A Deterministic Finite Automata (DFA) is a 5-tuple, (S, ∑, T, s, A). Explain these (S, ∑, T, s, A) terms.

Answer:

Question: 32 (Marks: 5) Attempted Questions: 29 Total Questions: 33

For example α denotes the action $x := y+1$, where x and y are integer variables, and η is the evaluation with $\eta(x) = 17$ and $\eta(y) = -2$, then what will be the value of ***Effect*(*α*, *η*)(*x*)** and ***Effect*(*α*, *η*)(*y*)**?

Answer:

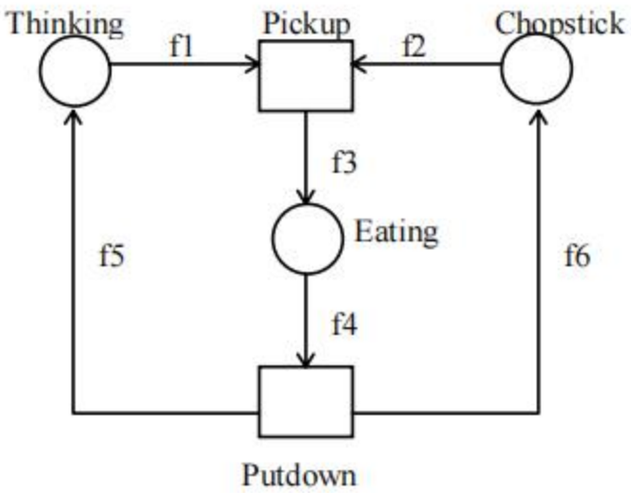
Question: 32 (Marks: 5) Attempted Questions: 30 Total Questions: 33

For example α denotes the action $x := y+1$, where x and y are integer variables, and η is the evaluation with $\eta(x) = 17$ and $\eta(y) = -2$, then what will be the value of ***Effect*(α, η)(x)** and ***Effect*(α, η)(y)?**

Answer:

Question: 31 (Marks: 5) Attempted Questions: 30 Total Questions: 33

The following is an example of the PrT net model of the Dining Philosophers problem.



List down the places and transitions from the following model.

Answer:

Formal Methods (CS636)

Question: 30 (Marks: 3) Attempted Questions: 32 Total Questions: 33

What is primitive proposition? Explain with example.

Answer:

Question: 29 (Marks: 3) Attempted Questions: 32 Total Questions: 33

In order to apply model checking to a design, different phases are involved. Mention the names of those phases.

Answer:

Question: 28 (Marks: 3) Attempted Questions: 32 Total Questions: 33

How many tokens are required at each input place to fire a transition?

Answer:

Only one token is required to fire a trasnation as an input.

Question: 30 (Marks: 3) Attempted Questions: 33 Total Questions: 33

What is primitive proposition? Explain with example.

Answer:

Question: 27 (Marks: 1) Attempted Questions: 33 Total Questions: 33

The truth value of '**4+3=7 or 5 is not prime**'.

.....

Choices:

- Whole compound statement is true.
- Only first part of the statement is true.
- Only second part of the statement is true.

.....

- This compound statement is false.

.....

Question: 26 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Which of the following statement is a proposition?

Choices:

- What is the time now?
- Read lesson carefully.
- The only odd prime number is 2.
- God bless you.

Question: 25 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Let P: I am in restaurant.; Q: I love food.; then q -> p(q implies p) is?

Choices:

- [x] If I love food, then I am in restaurant.
- [ ] I love food.
- [ ] If I am in restaurant, then I love food.
- [ ] I am not in restaurant.

Question: 24 (Marks: 1) Attempted Questions: 33 Total Questions: 33

One or more propositions can be combined to form a single _____ proposition using connectives.

Choices:

- (●) Compound
- ( ) Conditional
- ( ) Distributed
- ( ) Positive

Question: 23 (Marks: 1) Attempted Questions: 33 Total Questions: 33

A statement is not a(n) _____, if we cannot decide whether it is true or false.

Choices:

- question
- proposition
- example
- command

Question: 22 (Marks: 1) Attempted Questions: 33 Total Questions: 33

System _____ is impossible to achieve without the use of the right modeling approach.

Choices:

- development
- deployment
- maintenance
- verification

Question: 21 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Any verification using model-based techniques is only as good as the _____ of the system.

Choices:

- Software
- Model
- Requirements
- Hardware

Question: 20 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Which of the following is incorrect with respect to Model Checking?

Choices:

- Model checking is particularly valuable for verifying concurrent system.
- The model checker explores all possible paths through the model.
- Model checking is computationally very inexpensive.
- It supports partial verification.

Question: 19 (Marks: 1) Attempted Questions: 33 Total Questions: 33

System verification is impossible to achieve without the use of the right _____.

Choices:

- (•) Modeling approach
- ( ) Static approach
- ( ) System approach
- ( ) Integrated approach

Question: 18 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Transition System (TS) is called finite if _____.

Choices:

- S, Act, and AP are finite
- labeling function is finite
- S, I, and L are finite
- only S is finite

Question: 17 (Marks: 1) Attempted Questions: 33 Total Questions: 33

If Non-Deterministic Finite Automata (NFA) of 6 states excluding the initial state is converted into DFA, then maximum possible number of states for the DFA are _____.

Choices:

- 76
- 64
- 32
- 128

Question: 16 (Marks: 1) Attempted Questions: 33 Total Questions: 33

The maximum number of transitions which can be performed over a state in a (Deterministic Finite Automata) DFA are _____ where ∑= {a, b, c}.

Choices:

- 3
- 4
- 6
- 2

Question: 15 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Deterministic Finite Automata state has _____.

Choices:

- 3 tuples
- 4 tuples
- 2 tuples
- 5 tuples

Question: 14 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Number of final state(s) require to accept Φ in minimal finite automata.

Choices:

2

No final state requires.

1

3

Question: 13 (Marks: 1) Attempted Questions: 33 Total Questions: 33

Effect : Act × Eval(Var) → Eval(Var) is the _____.

Choices:

- effect function
- initial location
- initial condition
- set of actions

Question: 12 (Marks: 1) Attempted Questions: 33 Total Questions: 33

The nodes of a program graph are called _____.

Choices:

- (●) edges
- ( ) notations
- ( ) locations
- ( ) elements