

Professional Online Academy Vu Topper RM



CS636-Formal Methods
Update MCQ'S Mid Term
By Vu Topper RM



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Question No:1

(Marks:1)

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Let P: This is a great restaurant, Q: You should not come back here. Then 'This is a great restaurant and you should come back here.' is best represented by?

- A. $P \wedge Q$
- B. $P \vee Q$
- C. $\sim P \vee \sim Q$
- D. $P \wedge \sim Q$**

Question No:2

(Marks:1)

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In the system of logic, a proposition could have the value TRUE, FALSE or

- A. Fallacy
- B. Conditional
- C. Negative
- D. Undefined**

Question No:3

(Marks:1)

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"if you work hard you will succeed" – is an example for _____ proposition.

- A. Positive
- B. Conditional**
- C. Emotive
- D. Negative

Question No:4

(Marks:1)

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The universal quantifier denoted by -----

- A. \square
- B. \square
- C. \square**
- D. \sim

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Question No:5

(Marks:1)

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Conjunction is represented by the English word

- A. NOR
- B. OR
- C. NOT
- D. AND**

Question No:6

(Marks:1)

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Two propositions P and Q are said to be logically equivalent, if they have

- A. Compound proposition
- B. Identical truth tables**
- C. Unlike truth tables
- D. Identical Propositions

Question No:7

(Marks:1)

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Propositions that support the conclusion of an argument is called.....

- A. Concepts
- B. Statements
- C. Terms
- D. Premises**

Question No:8

(Marks:1)

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_____ refers to the opposite of what was originally stated?

- A. Negation**
- B. Disjunction
- C. Conjunction
- D. Implication

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Question No:9

(Marks:1)

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A compound proposition that is always TRUE and contain only T in their evaluation is called....

- A. Contradictions
- B. Contingency
- C. Tautologies**
- D. Proposition

Question No:10

(Marks:1)

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A proposition is said to be if it cannot be broken down into simpler propositions, that is, if it is not composite.

- A. Command
- B. Conditional
- C. Logical
- D. Primitive**

Question No:11

(Marks:1)

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_____ provides mathematical modeling.

- A. Testing tools
- B. Prototyping tools
- C. Wireframes
- D. Petri nets**

Question No:12

(Marks:1)

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In petri nets, tokens are denoted by a _____.

- A. rectangle
- B. directed arrow
- C. filled circle**
- D. vertical bar

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Question No:13

(Marks:1)

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The minimum number of states required to recognize an octal number divisible by 3 are/is

- A. 5
- B. 1
- C. 2
- D. 3**

Question No:14

(Marks:1)

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_____ constitute a branch of software engineering that incorporates the use of mathematics for software development.

- A. Quality assurance
- B. Requirement engineering
- C. Project management
- D. Formal methods**

Question No:15

(Marks:1)

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In Finite Automata a string is accepted if it reaches _____

- A. Accepting state**
- B. Middle state
- C. Initial state
- D. Final state

Question No:16

(Marks:1)

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There are _____ tuples in finite state machine.

- A. 5
- B. 4**
- C. 3
- D. 2

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Question No:17

(Marks:1)

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In petri nets, arc is denoted by _____.

- A. vertical bar
- B. rectangle
- C. directed arrow**
- D. circle

Question No:18

(Marks:1)

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Formal specifications allow for feedback on system specifications at _____ development stages.

- A. middle
- B. early
- C. early and later**
- D. later

Question No:19

(Marks:1)

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A _____ model that represents the intended behavior of a program can be used as a formal specification.

- A. data
- B. conceptual
- C. mathematical
- D. computational**

Question No:20

(Marks:1)

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Formal specifications can help considerably in generating suitable _____.

- A. mathematical notations
- B. test cases**
- C. use cases
- D. formulae

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Question No:21

(Marks:1)

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The language that can be expressed by any regular expression is called a

- A. Factorial
- B. Regular language**
- C. Binary language
- D. Prime Language

Question No:22

(Marks:1)

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In petri nets, tow main components are _____ and

- A. places, arcs
- B. places, transitions**
- C. tokens, places
- D. transitions, tokens

Question No:23

(Marks:1)

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g0 represents:

- A. effect function
- B. set of actions
- C. initial**
- D. initial location

Question No:24

(Marks:1)

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A model or a diagram is well-formed if its structure satisfies the _____ rules.

- A. development
- B. syntactic**
- C. study
- D. system

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Question No:25

(Marks:1)

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Loc0 represents:

- A. set of initial locations
- B. initial condition**
- C. set of actions
- D. effect function

Question No:26

(Marks:1)

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Act represents:

- A. effect function
- B. set of locations
- C. set of actions**
- D. initial condition

Question No:27

(Marks:1)

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The executable actions of a _____ system typically result from conditional branching.

- A. cost-dependent
- B. tool-dependent
- C. user-dependent
- D. data-dependent**

Question No:28

(Marks:1)

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The global system state, composed of the current individual states of the components plays a key role in

- A. interleaving
- B. communication
- C. parallelism
- D. concurrency**

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Question No:29

(Marks:1)

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Which of the following is NOT a phase of model checking process

- A. Running phase
- B. Integrated phase**
- C. Modeling phase
- D. Analysis phase

Question No:30

(Marks:1)

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Select the disadvantage of using Model Checking.

- A. It supports partial verification
- B. It checks only stated requirements**
- C. It is a potential “push-button” technology
- D. Model checking is particularly valuable for verifying concurrent systems

Question No:31

(Marks:1)

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Which one is the correct representation of effect function?

- A. Effect : Act - Eval(Var) \rightarrow Eval(Var)
- B. Effect : Act / Eval(Var) \rightarrow Eval(Var)
- C. Effect : Act \times Eval(Var) \rightarrow Eval(Var)**
- D. Effect : Act + Eval(Var) \rightarrow Eval(Var)

Question No:32

(Marks:1)

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Generally speaking, a consistency constraint C is a predicate defined on models such that _____ means that the model is consistent with respect to the constraint.

- A. $M(C) = \text{true}$
- B. $C(M) = \text{true}$**
- C. $M(C) = \text{false}$
- D. $C(M) = \text{false}$

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Question No:33

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Model checking is computationally very

- A. Inexpensive
- B. Expensive**
- C. Practical
- D. Hard

Question No:34

(Marks:1)

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Which of the following is NOT an example of a proposition?

- A. Ice floats on the water
- B. Where are you going?**
- C. $2+6=9$
- D. $2+2=4$

Question No:35

(Marks:1)

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Proposition which is affirmed on the basis of premises is called

- A. Suggestion
- B. Idea
- C. Conclusion**
- D. Concept

Question No:36

(Marks:1)

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A disjunction proposition is proposition

- A. Logical**
- B. Imperative
- C. Unconditional
- D. Conditional

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Question No:37

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$p \rightarrow q$ is logically equivalent to _____

A. $\neg p \wedge q$

B. $\neg p \wedge \neg q$

C. $p \wedge \neg q$

D. $\neg p \wedge \neg q$

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