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Assignment 8

The due date for submitting this assignment has passed.

Due on 2020-11-11, 23:59 IST.

Assignment submitted on 2020-11-11, 21:34 IST

1) Consider a regular expression $(a+b)^* \cdot c$. Which of the following are languages generated by the given regular expression? ***1 point***

- $\{ac, bc\}$
- $\{w|w$ is a word over $\{a, b\}^*$ ending with a $c\}$. (selected)
- $\{abc\}$.
- $\{ac\}$ or $\{bc\}$.

Yes, the answer is correct.
Score: 1
Accepted Answers:
$\{w|w$ *is a word over* $\{a, b\}^*$ *ending with a* $c\}$.

2) State true or false: Regular expressions and context free grammars are used to determine how characters form tokens and tokens form words in the syntax of a programming language. ***1 point***

- True. (selected)
- False.

Yes, the answer is correct.
Score: 1
Accepted Answers:

True.

3) Given a mutamt m of a ground string P and a test case t, when is t said to kill m? ***1 point***

- Test case t is said to kill m if m cannot run on t.
- Test case t is said to kill m if the output produced by P and m are the same when t is run on them.
- Test case t is said to kill m if the output produced by P on t is different from the output produced by m on t.
- Test case t is said to kill m if the run of P on t is different from the run of m on t.

Yes, the answer is correct.
Score: 1
Accepted Answers:
Test case t is said to kill m if the output produced by P on t is different from the output produced by m on t.

4) In the list of mutation operators for source code, the Boolean constants *True* and *False* can be used to replace which of the following operators? ***1 point***

- They can replace logical operators only.
- They can replace relational operators only.
- They can replace conditional operators only.
- They can replace both logical and relational operators.

Yes, the answer is correct.
Score: 1
Accepted Answers:
They can replace both logical and relational operators.

5) Which of the following special mutation operator indicates a failure as soon as it is reached in a program? ***1 point***

- `Bomb()` function.
- `FailOnZero()` function.

Yes, the answer is correct.
Score: 1
Accepted Answers:
***`Bomb()`** function.*

6) When is a mutant said to be a trivial mutant? ***1 point***

- A mutant is trivial if it is functionally equivalent to its ground string.
- A mutant is trivial if it can be killed by almost any test case.
- A mutant is trivial if it is invalid.
- A mutant is trivial if all logical and relational operators are replaced by the constant *True*.

Yes, the answer is correct.
Score: 1
Accepted Answers:
A mutant is trivial if it can be killed by almost any test case.

7) While using mutation testing to test a program, how many mutation operators are applied in one step of the mutation testing process? **1 point**

- Usually a small number of mutation operators based on need.
- Usually only one mutation operator at a time.
- It is decided by the target mutation score.
- It depends on how many mutants can be killed.

Yes, the answer is correct.
Score: 1
Accepted Answers:
Usually only one mutation operator at a time.

8) State true or false: Strongly killing a mutant and weakly killing a mutant are the same in mutation testing applied to test a method. **1 point**

- True.
- False

Yes, the answer is correct.
Score: 1
Accepted Answers:
False

9) Which of the following is a list of graph covreage criteria that are subsumed by mutation testing? **1 point**

- Node and edge coverage only.
- Node, edge and prime path coverage only.
- Node, edge and all-defs coverage only.
- Node, edge and all-uses coverage only.

Yes, the answer is correct.
Score: 1
Accepted Answers:
Node, edge and all-defs coverage only.

10) State true or false: Mutation testing subsumes combinatorial logic coverage criterion. **1 point**

- True.
- False.

Yes, the answer is correct.
Score: 1
Accepted Answers:
False.