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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Software Testing (course)


Course outline

How does an NPTEL online course work?

Pre-requisite Assignment

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

☐ Syntax-Based Testing (unit? unit=66&lesson=67)

☐ Mutation Testing (unit? unit=66&lesson=68)

Week 8: Assignment 8

The due date for submitting this assignment has passed.

Due on 2021-09-22, 23:59 IST.

Assignment submitted on 2021-09-15, 16:53 IST

1) Consider the regular expression $(a + b)^* \cdot c$. Does the word *abbabc* belong to the language of this regular expression? **1 point**

- ☒ Yes
☐ No

Yes, the answer is correct.
 Score: 1

Accepted Answers:
 Yes

2) Consider the regular expression $(a + b)^* \cdot c$ once again. Which of the following describes the language corresponding to this regular expression? **1 point**



The language is the set of all words over a and b that have a 's followed by b 's and can optionally end with a c .



The language is the set of all words over a and b that have a 's and b 's and can optionally end with a c .



The language is the set of all words over a and b ending with a c .



The language is the set of all words over a and b that optionally end with a c .

Yes, the answer is correct.
 Score: 1

☐ Mutation Testing for Programs (unit? unit=66&lesson=69)

☐ Mutation Testing: Mutation Operators for Source Code (unit? unit=66&lesson=70)

☐ Mutation Testing Vs. Graphs and Logic Based Testing (unit? unit=66&lesson=71)

☐ Week 8 Feedback Form: Software Testing (unit? unit=66&lesson=72)

☐ Practice: Week 8: Assignment 8 (Non Graded) (assessment? name=117)

☒ **Quiz: Week 8: Assignment 8 (assessment? name=131)**

Week 9

Week 10

Week 11

Week 12

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Accepted Answers:

The language is the set of all words over a and b ending with a c .

3) In the syntax of a programming language, which of the following is used to define how tokens form phrases? **1 point**

- ☐ Regular expressions.
- ☒ Context-free grammars.
- ☐ Context-sensitive grammars.
- ☐ Normal forms.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Context-free grammars.

4) Which of the following best defines a mutant? **1 point**

- ☒ A mutant is the result of one application of a mutation operator to a ground string.
- ☐ A mutant is the result of at least one application of a mutation operator to a ground string.

Yes, the answer is correct.

Score: 1

Accepted Answers:

A mutant is the result of one application of a mutation operator to a ground string.

5) State true or false: Are mutants test cases? **1 point**

- ☐ True
- ☒ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

False

6) Which of the following terms defines a mutant that can be killed by any test case? **1 point**

- ☐ Stillborn mutant.
- ☐ Dead mutant.
- ☐ Equivalent mutant.
- ☒ Trivial mutant.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Trivial mutant.

7) With reference to the notion of killing a mutant, which of the following terms do not need propagation of the error? **1 point**

- ☒ Weakly killing a mutant.
- ☐ Strongly killing a mutant.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Weakly killing a mutant.

8) When **bomb()** statement is used to replace a particular statement during mutation, **1 point** which of the following describes its use?

- ☒ Since it signals a failure as soon as it is executed, it can be used to test if the particular statement can be reached.
- ☐ Since it signals a potential failure, it can be used to check if the particular statement is erroneous.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Since it signals a failure as soon as it is executed, it can be used to test if the particular statement can be reached.

9) What is the result of applying the mutation operator **failOnZero()**? **1 point**

- ☒ The mutant with this operator is considered to be killed if the value of the resulting expression is zero.
- ☐ The mutant with this operator forces the value of the resulting expression to be zero.

Yes, the answer is correct.

Score: 1

Accepted Answers:

The mutant with this operator is considered to be killed if the value of the resulting expression is zero.

10) Replacing a statement of the form **x := a+b;** with **x:=a;** is an example of which **1 point** kind of mutation operator?

- ☐ Relational operator replacement.
- ☐ Assignment operator replacement.
- ☒ Arithmetic operator replacement.
- ☐ None of the above.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Arithmetic operator replacement.