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Course outline

About NPTEL ()

How does an NPTEL online course work? ()

Week 0 ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

Week 6 ()

Week 7 ()

Week 8 ()

Syntax-Based Testing (unit?

Week 8 : Assignment 8

The due date for submitting this assignment has passed.

Due on 2024-09-18, 23:59 IST.

As per our records you have not submitted this assignment.

1) Which of the following is a correct regular expression for the language of all binary words (over the alphabet {0, 1}) that begin with a 0 and end with a 1? ***1 point***

- $0 + (0 + 1)^* + 1$
- $0 \cdot (0 \cdot 1)^* \cdot 1$
- $0 \cdot (0 + 1)^* \cdot 1$
- $(0 \cdot (0 + 1)^* \cdot 1)^*$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$0 \cdot (0 + 1)^* \cdot 1$

2) Suppose a programming language has identifier names from the lower case English alphabet that can be exactly of length three. Which of the following is a regular expression that corresponds to these identifier names? ***1 point***

- $(a + b + c + \ldots + z) \cdot (a + b + c + \ldots + z) \cdot (a + b + c + \ldots + z)$
- $(a \cdot b \cdot c \cdot \ldots \cdot z) + (a \cdot b \cdot c \cdot \ldots \cdot z) + (a \cdot b \cdot c \cdot \ldots \cdot z)$
- $(a + b + c + \ldots + z)^*$
- $(a + b + c + \ldots + z) \cdot (a + b + c + \ldots + z) \cdot (a + b + c + \ldots + z)^*$

No, the answer is incorrect.

unit=66&lesson=67)
Mutatioon Testing (unit?unit=66&lesson=68)
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)
Practice: Week 8 : Assignment 8 (Non Graded) (assessment?name=212)
Week 8 Feedback Form: Software Testing (IIITB) (unit?unit=66&lesson=170)
Quiz: Week 8 : Assignment 8 (assessment?name=220)
Week 9 ()
Week 10 ()

Score: 0

Accepted Answers:
$(a+b+c+\ldots+z)\cdot(a+b+c+\ldots+z)\cdot(a+b+c+\ldots+z)$

3) Which are the three levels in which the syntax of a programming language is typically given? ***1 point***

- Characters, tokens, words and phrases.
- Words, phrases and context that specifies types, variable references etc.
- Regular expressions and context-free languages.
- Regular expressions and context-free grammars.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Words, phrases and context that specifies types, variable references etc.

4) State true or false: If a mutant is strongly killed, it is also weakly killed. ***1 point***

- True.
- False.

No, the answer is incorrect.
Score: 0

Accepted Answers:
True.

5) If an expression of the form if `(a <= b)` is replaced with if `(true)`, then it is an application of which of the mutation operators below? ***1 point***

- Boolean constant replacement.
- Logical operator replacement.
- Relational operator replacement.
- True operator replacement.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Relational operator replacement.

For the next five questions, consider the code snippet below and the mutation given in line 4. Answer the following with reference to mutation testing of the code snippet below.

```
1 public static int findVal(int array_num[], int Val)
2 {
3 int findVal = -1;
4 for (i=0; i < array_num.length; i++)
4 for (i=1; i < array_num.length; i++)
5    if (array_num[i] == Val)
6       findVal = i;
7. return (findVal);
8. }
```

Week 11 ()

Week 12 ()

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6) Identify the mutation operator that is applied at statement **4** in the above code snippet. ***1 point***

- Arithmetic operator replacement.
- Loop initialization replacement.
- Scalar variable replacement.
- Constant value replacement.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Scalar variable replacement.

7) Can the mutant be reached if the input array is empty? ***1 point***

- Yes.
- No.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Yes.

8) State Yes or No: Is it possible that infection of the mutation occurs when the input array is the empty array? ***1 point***

- Yes.
- No.

No, the answer is incorrect.
Score: 0
Accepted Answers:
No.

9) Which of the following test cases ensures that the mutated statement is infected but propagation does not occur? ***1 point***

- A test case with the value not in the array will ensure that infection occurs and propagation does not occur.
- A test case in which the last occurrence of the value is not in array num[0] will ensure infection and not propagation.
- A test case in which the element occurs exactly once in the array will ensure that infection occurs and propagation does not occur.
- A test case in which the last occurrence of the value is anywhere except in the first position will ensure that infection occurs and propagation does not occur.

No, the answer is incorrect.
Score: 0
Accepted Answers:
A test case in which the last occurrence of the value is not in array num[0] will ensure infection and not propagation.

10) Which of the following test cases will strongly kill the mutant? ***1 point***

- A test case in which the value is not in the array will strongly kill the mutant.
- A test case in which the value occurs exactly once at any position in the array will strongly kill the mutant.
- A test case in which the value is in the first position of the array will strongly kill the mutant.
- A test case in which the value is not in the first position of the array will strongly kill the mutant.

No, the answer is incorrect.
Score: 0

Accepted Answers:
A test case in which the value is in the first position of the array will strongly kill the mutant.