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

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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 ()

Week 8 : Assignment 8

Your last recorded submission was on 2022-09-21, 21:16 Due date: 2022-09-21, 23:59 IST.
IST

1) Consider the regular expression $(a + b) \cdot (a + b)^*$ over the alphabet $\Sigma = \{a, b\}$. **1 point**
Which of the following options represents a list of words generated by this regular expression?

- ☐ $ab, a, aab.$
- ☐ $abab, babab.$
- ☐ $aaa, bbb.$
- ☒ All of the above.

2) For the same regular expression $(a + b) \cdot (a + b)^*$, which of the following options **1 point**
represents the language corresponding to the regular expression?

- ☐ The language is the set of all words over a and b that have at least one a and at least one b in them.
- ☒ The language is the set of all words over a and b that have at least one a or at least one b in them.

3) While parsing a program to extract syntactic information, which of the following **1 point**
defines how characters form tokens?

- ☒ Regular expressions.
- ☐ Context-free grammars.
- ☐ Context-sensitive grammars.
- ☐ The normal form of the grammar.

4) Consider the context-free grammar given by $G = (N, T, P, S)$ where **1 point**
 $N = \{S, X\}$, $T = \{a, b\}$, $P = \{S \rightarrow aXb, X \rightarrow ab\}$. Which of the following is the
language generated by this grammar?

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

● Mutation 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=118)

● Quiz: Week 8 : Assignment 8 (assessment? name=143)

○ Week 8 Feedback Form: Software Testing (unit? unit=66&lesson=131)

Week 9 ()

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☒ The language generated by G is $\{w | w = aabb\}$.

☐ The language generated by G is $\{w | w \text{ is of the form } a^n b^n, n \geq 1\}$

5) State yes or no: Is the ground string in mutation testing the same as the program under test? **1 point**

☒ Yes.

☐ No.

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

☐ Dead mutant.

☐ Equivalent mutant.

☒ Trivial mutant.

☐ Idempotent mutant.

7) Suppose a decision statement like if ($x < 0$ && $z == 5$) is mutated to get if ($x > 0$ && $z == 5$) then it is an example of which kind of mutation operator? **1 point**

☐ Replacing a logical operator.

☒ Replacing a relational operator.

☐ Replacing a decision statement.

☐ Replacing a condition statement.

8) As per the lectures, replacing a particular assignment statement with a statement like `failOnZero()` is an example of a mutation operator applied at which of the levels in testing? **1 point**

☒ Program level.

☐ Integration level.

☐ Statement level.

☐ De-bugging level.

9) A programmer decides to save time and apply two or three mutation operators together to increase the chances of finding many errors together. Is this considered to be a useful strategy in mutation testing? **1 point**

☐ Yes, it will find many errors early.

☒ No, mutation operators work best when applied one at a time.

10) State true or false: Mutation testing can be used to show that a program behaves identically when a particular operation is replaced or removed. **1 point**

☐ True.

☒ False.

You may submit any number of times before the due date. The final submission will be considered for grading.

Submit Answers

