X

Week 8 : Assignment 8

The due date for submitting this assignment has passed.

Due on 2022-09-21, 23:59 IST.

Assignment submitted on 2022-09-21, 21:16 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.

Yes, the answer is correct.
Score: 1

Accepted Answers:
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.

Yes, the answer is correct.
Score: 1

Accepted Answers:
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 defines how characters form tokens? ***1 point***

- (•) Regular expressions.
- ( ) Context-free grammars.
- ( ) Context-sensitive grammars.
- ( ) The normal form of the grammar.

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

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

- (•) The language generated by G is $\{w|w = aabb\}$.
- ( ) The language generated by G is $\{w|w$ is of the form $a^n b^n, n \geq 1\}$

Yes, the answer is correct.
Score: 1
Accepted Answers:
The language generated by G is $\{w|w = aabb\}$.

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

- (•) Yes.
- ( ) No.

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

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.

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

Text Transcripts ()

Live sessions ()

Books ()

- ○ Replacing a condition statement.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Replacing a relational operator.

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.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Program 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.

Yes, the answer is correct.
Score: 1

Accepted Answers:
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.

No, the answer is incorrect.
Score: 0

Accepted Answers:
True.