Unit 13 - Week 11

Assignment 11

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-10-16, 23:59 IST.

1) In symbolic execution, various execution paths of a program are represented using which of the following data structures below? ***1 point***

- A forest of paths
- A forest of trees
- A tree of executions
- A set of path constraints

No, the answer is incorrect.
Score: 0
Accepted Answers:
A tree of executions

2) State true or false: ***1 point***
Symbolic execution can be terminated if the program hits an error.

- True
- False

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

3) Which of the following lists disadvantages of symbolic testing? ***1 point***

- Path constraint cannot be solved by a constraint solver
- Program has an error
- Program has too many paths
- Program has many functions

No, the answer is incorrect.
Score: 0
Accepted Answers:
Path constraint cannot be solved by a constraint solver

4) Which of the following defines symbolic variables? ***1 point***

- Special symbols for program variables
- Memory addresses for program variables
- Temporary names for program variables
- Concrete values for program variables

No, the answer is incorrect.
Score: 0
Accepted Answers:
Memory addresses for program variables

5) State true or false: ***1 point***
DART algorithm, when run on a program, always terminates

- True
- False

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

Consider the code fragment below. It is written in a generic programming language, doesn't represent a full executable piece of code.
Answer the following questions related to symbolic execution of the given code fragment.

```
0: int x, y;
1: if (x > y) {
2:       x = x + y;
3:       y = x - y;
4:       x = x - y;
5: if (x - y > 0)
6: assert(false);
}
```

6) What does the code fragment do? ***1 point***

- Tries to check if x is greater than y
- Tries to check if y is greater than x
- Swaps the values x and y
- Swaps the values of x and x-y

No, the answer is incorrect.
Score: 0
Accepted Answers:
Swaps the values x and y

7) How many nodes will be there in the symbolic execution tree of this code fragment? ***1 point***

- 3 nodes
- 4 nodes
- 7 nodes
- 8 nodes

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

8) What will be the path constraint at line 1 of the code fragment such that no further execution happens? ***1 point***

- x > y
- x <= y

No, the answer is incorrect.
Score: 0
Accepted Answers:
x <= y

9) What will be the path constraint to reach statement 6? ***1 point***

- x > y && y — x > 0
- x > y && y — x <=0
- x <=y
- x > y && x — y > 0

No, the answer is incorrect.
Score: 0
Accepted Answers:
x > y && y — x > 0

10)Is statement 6 reachable in the program fragment? ***1 point***

- Yes
- No

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