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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 ()

- ☐ Lecture 5 - Basics of Graphs: As used in testing (unit? unit=23&lesson=24)
- ☐ Lecture 6 - Structural Graph Coverage Criteria (unit? unit=23&lesson=25)
- ☐ Lecture 7 - Elementary Graph Algorithms (unit? unit=23&lesson=26)

## Week 2 : Assignment 2

The due date for submitting this assignment has passed.

Due on 2022-08-10, 23:59 IST.

Assignment submitted on 2022-08-09, 11:27 IST

- 1) Which of the following best defines an infeasible test path? **1 point**
- ☐ An infeasible test path is one that does not exist in the graph.
  - ☒ An infeasible test path is one that can be executed by a failed test case.
  - ☐ An infeasible test path is one that cannot be executed by any test case.
  - ☐ An infeasible test path is one that does not start at an initial vertex or end at a final vertex.

No, the answer is incorrect.

Score: 0

Accepted Answers:

*An infeasible test path is one that cannot be executed by any test case.*

- 2) How are test requirements defined and met in graphs-based structural coverage criteria? **1 point**

- ☒ Test requirements are basically the same as test paths, they are given as test paths.
- ☐ Test requirements are defined as properties of test paths and they are met by using test paths that satisfy each test requirement.

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Test requirements are defined as properties of test paths and they are met by using test paths that satisfy each test requirement.*

- 3) In control flow graphs, which of the terms below represents a basic block? **1 point**

- ☐ A basic block is a sequence of statements such that there is no branching in the sequence.

☒ Lecture 8 -  
Elementary  
Graph  
Algorithms -  
Part 2 (unit?  
unit=23&lesson=27)

☐ Lecture 9 -  
Algorithms:  
Structural  
Graph  
Coverage  
Criteria (unit?  
unit=23&lesson=28)

☒ Practice: Week  
2 : Assignment  
2 (Non  
Graded)  
(assessment?  
name=113)

☒ Quiz: Week 2  
: Assignment  
2  
(assessment?  
name=137)

☐ Week 2  
Feedback  
Form:  
Software  
Testing (unit?  
unit=23&lesson=125)

Week 3 ()

Week 4 ()

Week 5 ()

Week 6 ()

Week 7 ()

Week 8 ()

Week 9 ()

Week 10 ()

Week 11 ()

Week 12 ()

☐ A basic block is any sequence of statements that occurs as a path in the control flow graph.

No, the answer is incorrect.

Score: 0

Accepted Answers:

*A basic block is a sequence of statements such that there is no branching in the sequence.*

4) Consider a control flow graph  $G$  corresponding to a method and a strongly connected component  $S$  in  $G$ . Which of the following does  $S$  represent in the code that  $G$  corresponds to? **1 point**

☐  $S$  represents the entire method in case the method does not have loops.

☒  $S$  represents a loop in the method.

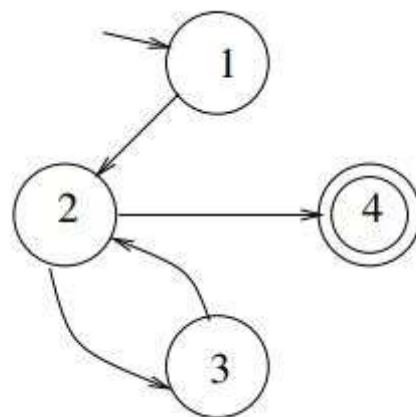
Yes, the answer is correct.

Score: 1

Accepted Answers:

*$S$  represents a loop in the method.*

5) Which of the algorithms will return the shortest paths between two nodes in a control flow graph? **1 point**



☒ Breadth first search.

☐ Depth first search.

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Breadth first search.*

6) State true or false: There are test paths that achieve node coverage but not edge coverage. **1 point**

☐ True.

☒ False.

Yes, the answer is correct.

Score: 1

Accepted Answers:

*False.*

**Learning  
Materials ()**

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Transcripts ()**

**Live  
sessions ()**

**Books ()**

7) Which of the following test paths achieve edge coverage?

**1 point**

- ☐ Test path [1, 2, 3, 2, 4].
- ☐ Test paths [1, 2, 4] and [1, 2, 3, 2].
- ☒ Both the paths above achieve edge coverage.
- ☐ None of the above two paths achieve edge coverage.

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Test path [1, 2, 3, 2, 4].*

8) State yes or no: In the graph above, the test path [1, 2, 3, 2, 4] tours the pair of edges [3, 2, 3].

**1 point**

- ☒ Yes.
- ☐ No.

No, the answer is incorrect.

Score: 0

Accepted Answers:

*No.*

9) The test paths {[1, 2, 4], [1, 2, 3, 2, 3, 2, 4]} achieve which of the following coverage criteria?

**1 point**

- ☐ Node coverage only.
- ☐ Edge coverage only.
- ☐ Node and edge coverage only.
- ☒ Edge pair coverage

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Edge pair coverage*

10) State true or false: The test path [1, 2, 3, 2, 4] achieves edge coverage.

**1 point**

- ☒ True.
- ☐ False.

Yes, the answer is correct.

Score: 1

Accepted Answers:

*True.*