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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

Week 3

Week 4

● Lecture 15 - Data Flow Graph Coverage Criteria : Applied to Test Code (unit? unit=28&lesson=29)

● Lecture 16 - Software Design and Integration Testing (unit? unit=28&lesson=30)

● Lecture 17 - Design Integration

# Assignment 4

The due date for submitting this assignment has passed.

**Due on 2020-10-14, 23:59 IST.**

Assignment submitted on 2020-10-11, 23:10 IST

1) If method  $A$  uses a variable  $v$  shared with method  $B$ , where  $A$  writes to  $v$  and  $B$  reads from  $v$ , then, it is an example of which kind of coupling interface listed below? **1 point**

- ☐ External device coupling.
- ☐ Parameter coupling.
- ☐ Interface coupling.
- ☒ Shared data coupling.

Yes, the answer is correct.  
Score: 1

Accepted Answers:  
*Shared data coupling.*

2) Choose an answer from the options below: A node in a callee function that defines a variable  $x$  and has a def-clear path from the node through a call site to a caller function is referred to as . . . . . **1 point**

- ☒ Last-def of  $x$ .
- ☐ Def of  $x$ .
- ☐ First-use of  $x$ .
- ☐ Use of  $x$ .

Testing and Graph Coverage (unit? unit=28&lesson=31)

● Lecture 18 - Specification Testing and Graph Coverage (unit? unit=28&lesson=32)

● Lecture 19 - Graph Coverage and Finite state Machines (unit? unit=28&lesson=33)

○ Feedback for week 4 (unit? unit=28&lesson=34)

● Quiz: Assignment 4 (assessment? name=117)

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

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Yes, the answer is correct.  
Score: 1  
Accepted Answers:  
*Last-def of x.*

3) Which of the following best defines a test driver?

**1 point**

- ☐ It is a skeletal or special purpose implementation of a software module, used to develop or test a component that calls it.
- ☒ It is a software component that replaces a component that takes care of the control and/or the calling of a software component.

Yes, the answer is correct.  
Score: 1

Accepted Answers:

*It is a software component that replaces a component that takes care of the control and/or the calling of a software component.*

4) State true or false: Both top-down and bottom-up integration testing work well with a hierarchical design. **1 point**

- ☒ True.
- ☐ False.

Yes, the answer is correct.  
Score: 1

Accepted Answers:

*True.*

5) State true or false: Control flow graphs are finite state machines representing code. **1 point**

- ☐ True.
- ☒ False.

Yes, the answer is correct.  
Score: 1

Accepted Answers:

*False.*

6) Which of the following best describes pre-conditions in finite state machines?

**1 point**

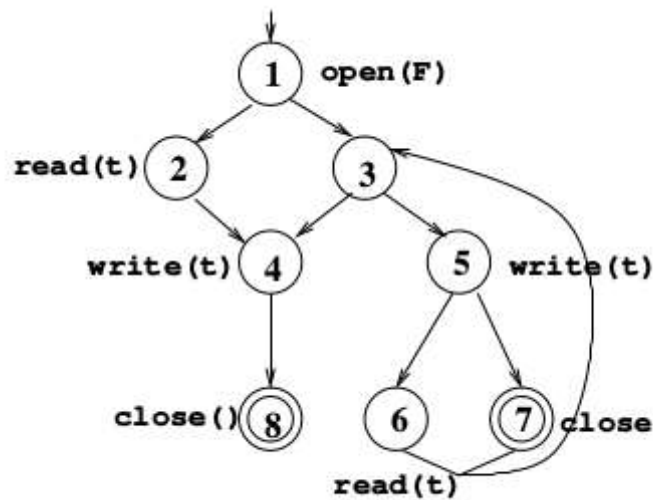
- ☒ They are conditions that must be true for transitions to be taken.
- ☐ They represent sequencing constraints that describe the order in which methods need to be called.

Yes, the answer is correct.  
Score: 1

Accepted Answers:

*They are conditions that must be true for transitions to be taken.*

Consider the graph representing method calls for a class **FileADT** given below. The methods used are **open(F)**, **read(t)**, **write(t)** and **close()**, where **F** is a file and **t** is a text pattern.



Answer the following questions related to sequencing constraints on the graph for the given methods.

7) Consider a sequencing constraint given by "Each time a file is open, a read or write **1 point** should be called before it is closed". Does the given graph satisfy this sequencing constraint?

- ☒ Yes.  
☐ No.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Yes.

8) Consider a sequencing constraint given by "A write should be executed before every close". Does the given graph satisfy this sequencing constraint? **1 point**

- ☒ Yes.  
☐ No.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Yes.

9) Which of the following statements are correct with respect to the sequencing constraints on the methods given by the above graph? **1 point**

- ☒ The paths [1, 3, 4, 8] and [1, 3, 5, 7] violate the sequencing constraint "A read should be executed before every write, to a file."  
☐ Only the path [1, 3, 4, 8] violates the sequencing constraint "A read should be executed before every write, to a file".

Yes, the answer is correct.

Score: 1

Accepted Answers:

*The paths [1, 3, 4, 8] and [1, 3, 5, 7] violate the sequencing constraint "A read should be executed before every write, to a file".*

10) State true or false: The given graph satisfies the sequencing constraint "Every path from open to close has a write followed by a read, in order". **1 point**

☐ True.

☒ False.

Yes, the answer is correct.

Score: 1

Accepted Answers:

*False.*