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

Course outline

About NPTEL ()

How does an NPTEL online course work? ()

Week 0 ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

- ☐ Assignment 4: Graph Coverage Criteria (unit? unit=45&lesson=46)
- ☐ Logic: Basics Needed for Software

Week 5 : Assignment 5

The due date for submitting this assignment has passed.

Due on 2024-08-28, 23:59 IST.

Assignment submitted on 2024-08-25, 17:17 IST

1) For a given propositional logic formula, if all possible assignments of true/false values to the atomic propositions make the formula evaluate to true, what is the formula called? **1 point**

- ☒ The formula is a tautology.
- ☐ The formula is a satisfiable formula.
- ☐ The formula is a contradiction.
- ☐ The formula is invalid.

Yes, the answer is correct.

Score: 1

Accepted Answers:

The formula is a tautology.

2) Consider the propositional logic formula $\varphi = p \vee q \vee r$. Which of the following true or false assignments to p , q and r make the formula φ evaluate to false? In the options below T represents True and F represents False. **1 point**

- ☐ $p = F, q = T, r = F$.
- ☐ $p = T, q = F, r = F$.
- ☐ $p = F, q = T, r = T$.
- ☒ $p = F, q = F, r = F$.

Yes, the answer is correct.

Testing (unit?
unit=45&lesso
n=47)

☐ Logic:
Coverage
Criteria (unit?
unit=45&lesso
n=48)

☐ Coverage
Criteria,
Contd. (unit?
unit=45&lesso
n=49)

☐ Logic
Coverage
Criteria (unit?
unit=45&lesso
n=50)

☐ Practice:
Week 5:
Assignment 5
(Non graded)
(assessment?
name=204)

☒ **Quiz: Week 5
: Assignment
5
(assessment?
name=217)**

☐ Week 5
Feedback
Form:
Software
Testing (IITB)
(unit?
unit=45&lesso
n=173)

Week 6 ()

Week 7 ()

Week 8 ()

Week 9 ()

Week 10 ()

Week 11 ()

Week 12 ()

Score: 1

Accepted Answers:

$$p = F, q = F, r = F.$$

3) Which logic coverage criterion tests for all possible assignments of true/false values **1 point** but can get infeasible due to there being a large number of assignments?

- ☐ Clause coverage.
- ☐ General active clause coverage.
- ☐ Correlated active clause coverage.
- ☒ All combinations coverage.

Yes, the answer is correct.

Score: 1

Accepted Answers:

All combinations coverage.

4) Which of the following is a correct order of subsumption amongst logic coverage **1 point** criteria? In the options below, read \rightarrow as 'subsumes'.

- ☐ Combinatorial coverage \rightarrow General inactive clause coverage \rightarrow Restricted inactive clause coverage.
- ☐ Combinatorial coverage \rightarrow General active clause coverage \rightarrow Restricted inactive clause coverage.
- ☐ Combinatorial coverage \rightarrow Correlated active clause coverage \rightarrow Predicate coverage.
- ☒ Combinatorial coverage \rightarrow General active clause coverage \rightarrow Correlated active clause coverage.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Combinatorial coverage \rightarrow Correlated active clause coverage \rightarrow Predicate coverage.

5) Consider a predicate p and a clause a in p . When evaluating p_a , the conditions **1 point** under which clause a determines p , if we get a value False, what does this indicate?

- ☒ p_a evaluating to False indicates that it is not possible for clause a to determine p .
- ☐ p_a evaluating to False indicates that clause a always determines p , irrespective of the truth values of the other clauses.

Yes, the answer is correct.

Score: 1

Accepted Answers:

p_a evaluating to False indicates that it is not possible for clause a to determine p .

For the next five questions, consider a simple predicate $\ddot{p} = \dot{a} \wedge b$, with two clauses \dot{a} and b . Answer the following questions with reference to the logic coverage criteria for the predicate p . The truth table for \ddot{p} is the table for the \wedge (AND) connective and is not given here. Please write the truth table and compute the true or false values for \ddot{p} , \ddot{p}_a and \ddot{p}_b , for true/false combinations for the clauses \dot{a} and b .

6) What is p_a , the conditions under which clause a determines p ? **1 point**

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☐

$p_a = a.$

☐

$p_a = b.$

☐

$p_a = \text{True}.$

☐

$p_a = \text{False}.$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$p_a = b.$

7) What is p_b , the conditions under which clause b determines p ? **1 point**

☐

$p_b = a.$

☐

$p_b = b.$

☒

$p_b = \text{True}.$

☐

$p_b = \text{False}.$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$p_b = a.$

8) State yes or no: CACC pairs for the clauses a and b are the same as GACC pairs. **1 point**

☐

Yes.

☒

No.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Yes.

9) State yes or no: RACC pairs for the clauses a and b are the same as CACC pairs. **1 point**

☐

Yes.

☒

No.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Yes.

10) State yes or no: RICC tuples for the clauses a and b are not the same as CACC tuples. **1 point**

☐

Yes.

☒

No.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Yes.