**Assignment #5 \_\_\_/26 MARKS**

* You are encouraged to work in groups of 2 or 3 for this assignment
* There are 3 pages to this assignment description
* Due: Friday 11:59pm on Nov 22, 2024
* Submission Instructions:

1. Complete this MS Word document by filling in your answers below.
   1. Name your file as: ***lastname\_firstname\_Assignment\_5*** using one of the member’s name in your group.
   2. Save as PDF
2. For your source code, please zip them up using the name you used above: ***lastname\_firstname\_Assignment\_5\_Q2\_Source\_Code.zip,***

***lastname\_firstname\_Assignment\_5\_Q3\_Source\_Code.zip, etc.***

1. Submit all files to CourseLink

**Group Members**

Member #1:

First Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; Last Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Member #2:

First Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; Last Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Member #3:

First Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; Last Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Chapter 8.1, Question 4 i) , provide solutions for (a) through (f):
2. List the clauses that go with predicate (1 mark)
3. Compute (and simplify) the conditions under which each clause determines predicate (2 marks)
4. Write the complete truth table for each clause. Label your rows starting from 1. Use the format in the example underneath the definition of Combinatorial Coverage in Section 8.1.1. That is, row 1 should be all clauses true. You should include columns for the conditions under which each clause determines the predicate, and also a column for the value of the predicate itself. (4 marks)
5. List all pairs of rows from your table that satisfy General Active Clause Coverage (GACC) with respect to each clause. (2 marks)
6. List all pairs of rows from your table that satisfy Correlated Active Clause Coverage (CACC) with respect to each clause. (2 marks)
7. List all pairs of rows from your table that satisfy Restricted Active Clause Coverage (RACC) with respect to each clause. (2 marks)
8. Chapter 8.3, question 1. Paste a screenshot of your program and test results below. Submit your code to CourseLink (2 marks).
9. Chapter 8.3, question 3. Paste a screenshot of your program and test results below. Submit your code to CourseLink (3 marks).
10. Chapter 8.5, question 5: Consider the following deterministic finite state machine:

A table with black text and black letters

Description automatically generated

1. Draw the finite state machine (2 marks)
2. This machine does not specify which conditions cause a state to transition back to itself. However, these conditions can be derived from the existing conditions. Derive the conditions under which each state will transition back to itself. (3 marks)

|  |  |  |
| --- | --- | --- |
| Current State | Condition | Next State |
|  |  |  |
|  |  |  |

1. Find CACC tests for each transition from the Active state (including the transition from Active to Active). (3 marks)