Daniel Neal

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p1 = a∧b

p2 = a⊕b

p3 = a∧(¬b∨c)

p4 = a→(b→c)

p5 = (a∧b)∨(b∧c)∨(a∧c)

Write the complete truth table for each predicate.

p = (a∧b)∨(b∧c)∨(a∧c)

Write the complete truth table for the predicate.

(1) List all pairs of rows from your table that satisfy General Active Clause Coverage (GACC) with respect to each clause.

(2) List all pairs of rows from your table that satisfy Correlated Active Clause Coverage (CACC) with respect to each clause.

(3) List all pairs of rows from your table that satisfy Restricted Active Clause Coverage (RACC) with respect to each clause.

(4) List all 4-tuples of rows from your table that satisfy General Inactive Clause Coverage (GICC) with respect to each clause. List any infeasible GICC test requirements.

(5) List all 4-tuples of rows from your table that satisfy Restricted Inactive Clause Coverage (RICC) with respect to each clause. List any infeasible RICC test requirements.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | a | b | c | (aɅb) | a⊕b | a∧(¬b∨c) | a→(b→c) | **(aɅb) V (bɅc) V (aɅc)** | **Pa** | **Pb** | **Pc** | **Pd** | **Pe** |
| 1 | T | T | T | T | F | T | **T** | **T** |  |  |  | **\*** |  |
| 2 | T | T | F | T | F | F | **T** | **T** | **\*** | **\*** |  |  |  |
| 3 | T | F | T | F | T | T | **T** | **T** | **\*** |  | **\*** |  |  |
| 4 | T | F | F | F | T | F | **T** | **F** |  | **\*** | **\*** |  |  |
| 5 | F | T | T | F | T | F | **T** | **T** |  | **\*** | **\*** |  |  |
| 6 | F | T | F | F | T | F | **T** | **F** | **\*** |  | **\*** |  |  |
| 7 | F | F | T | F | F | F | **F** | **F** | **\*** | **\*** |  | **\*** |  |
| 8 | F | F | F | F | F | F | **T** | **F** |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | a | b | (aɅb) | **Pa** | **Pb** |
| 1 | T | T | T | **\*** | **\*** |
| 2 | T | F | F |  | **\*** |
| 3 | F | T | F | **\*** |  |
| 4 | F | F | F |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | a | b | a⊕b | **Pa** | **Pb** |
| 1 | T | T | F | **\*** | **\*** |
| 2 | T | F | T | **\*** | **\*** |
| 3 | F | T | T | **\*** | **\*** |
| 4 | F | F | F | **\*** | **\*** |

(1)

GACC (b): {1, 3} \* {2.4}

(2)

CACC (b): same as GACC

(3)

RACC (b): {2,4} \* {5,7}

(4)

(5)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | a | b | c | a∧(¬b∨c) | **Pa** | **Pb** | **Pc** |
| 1 | T | T | T | T | **\*** |  |  |
| 2 | T | T | F | F | **\*** | **\*** |  |
| 3 | T | F | T | T | **\*** |  |  |
| 4 | T | F | F | T | **\*** | **\*** |  |
| 5 | F | T | T | F | **\*** |  |  |
| 6 | F | T | F | F | **\*** |  |  |
| 7 | F | F | T | F | **\*** |  |  |
| 8 | F | F | F | F | **\*** |  |  |

Pa

T ∧(¬b∨c) X F ∧(¬b∨c)

T X F

**T**

Pb

a∧(T∨c) X a∧(F∨c)

a∧(T) X a∧(c)

a = T, c = F

Pc

a ∧(¬b∨T) X a ∧(¬b∨F)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | a | b | c | a→(b→c) | **Pa** | **Pb** | **Pc** |
| 1 | T | T | T | **T** |  |  |  |
| 2 | T | T | F | **T** | **\*** | **\*** |  |
| 3 | T | F | T | **T** | **\*** |  | **\*** |
| 4 | T | F | F | **T** |  | **\*** | **\*** |
| 5 | F | T | T | **T** |  | **\*** | **\*** |
| 6 | F | T | F | **T** | **\*** |  | **\*** |
| 7 | F | F | T | **F** | **\*** | **\*** |  |
| 8 | F | F | F | **T** |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | a | b | c | **(aɅb) V (bɅc) V (aɅc)** | **Pa** | **Pb** | **Pc** |
| 1 | T | T | T | **T** |  |  |  |
| 2 | T | T | F | **T** | **\*** | **\*** |  |
| 3 | T | F | T | **T** | **\*** |  | **\*** |
| 4 | T | F | F | **F** |  | **\*** | **\*** |
| 5 | F | T | T | **T** |  | **\*** | **\*** |
| 6 | F | T | F | **F** | **\*** |  | **\*** |
| 7 | F | F | T | **F** | **\*** | **\*** |  |
| 8 | F | F | F | **F** |  |  |  |

(1) GACC (a): {2,3} \* {6,7}

GACC (b): {2,5} \* {4,7}

GACC (c): {3,5} \* {4,6}

GACC (d): {1,8}

(2) CACC (a): same as GACC

CACC (b): same as GACC

CACC (c): same as GACC

GACC (d): {1,8}

(3) RACC (a): {2,6} \* {3,7}

RACC (b): {2,4} \* {5,7}

RACC (c): {3,4} \* {5,6}