**Question 2**

**Decision table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Rule 1** | **Rule 2** | **Rule 3** | **Rule 4** | **Rule 5** |
| **Conditions** | | | | | |
| $5,000.01 <= premium (dollars) <= $10,000.00 | Y |  |  |  |  |
| $2,000.00 <= premium (dollars) <= $5,000.00 |  | Y |  |  |  |
| $1,250.01 <= premium (dollars) <= $1,999.99 |  |  | Y |  |  |
| $350.00 <= premium (dollars) <= $1,250.00 |  |  |  | Y |  |
| $0.00 <= premium (dollars) <= $349.99 |  |  |  |  | Y |
| **Actions** | | | | | |
| discount | 0.2 | 0.15 | 0.10 | 0.05 | 0.00 |
| **Table implements "first-of" rule** | | | | | |

**Test case table:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case Number** | **Inputs** | | | | | | **Expected outputs** | | **Basis Path** | **MCDC stmt 26-34** |
| **premium** | **policyHolder** | **yearsMember** | **multiPolicies** | **safetyRating** | **taxRate** | **primeStatus** | **totalPremium** |
| 1 | $5,000.01 | TRUE | 5 | TRUE | 500 | 0.0825 | TRUE | $4,330.01 | 12-13-26-27-36 |  |
| 2 | $2,000.00 | TRUE | 5 | TRUE | 500 | 0.0825 | TRUE | $1,840.25 | 12-15-16-26-27-36 |  |
| 3 | $1,250.01 | TRUE | 5 | TRUE | 500 | 0.0825 | TRUE | $1,217.82 | 12-15-18-19-26-27-36 |  |
| 4 | $350.00 | TRUE | 5 | TRUE | 500 | 0.0825 | TRUE | $359.93 | 12-15-18-21-22-26-27-36 |  |
| 5 | $349.99 | TRUE | 5 | TRUE | 500 | 0.0825 | TRUE | $378.86 | 12-15-18-21-24-26-27-36 |  |
| 6 | $349.99 | FALSE | 6 | TRUE | 500 | 0.0825 | TRUE | $378.86 | 12-15-18-21-24-26-29-30-36 |  |
| 7 | $349.99 | FALSE | 5 | FALSE | 500 | 0.0825 | FALSE | $378.86 | 12-15-18-21-24-26-29-32-36 |  |
| 8 | $349.99 | FALSE | 5 | TRUE | 500 | 0.0825 | FALSE | $378.86 | 12-15-18-21-24-26-29-32-33-36 | MCDC FFTF |
| 9 | $349.99 | FALSE | 5 | TRUE | 501 | 0.0825 | TRUE | $378.86 | 12-15-18-21-24-26-29-32-33-34-36 | MCDC FFTT |
| 10 | $5,000.00 | FALSE | 5 | FALSE | 501 | 0.0825 | FALSE | $4,600.63 | - | MCDC FFFT |
| 11 | $5,000.00 | TRUE | 0 | TRUE | 500 | 0.0825 | TRUE | $4,600.63 | - | Extreme range test for yearsMember |
| 12 | $5,000.01 | TRUE | 50 | TRUE | 501 | 0.0825 | TRUE | $4,330.01 | - | Extreme range test for yearsMember |
| 13 | $1,250.00 | TRUE | 6 | FALSE | 1 | 0.0825 | TRUE | $1,285.47 | - | Extreme range test for safetyRating |
| 14 | $1,999.99 | TRUE | 5 | FALSE | 999 | 0.0825 | TRUE | $1,948.49 | - | Extreme range test for safetyRating |
| 15 | $0.00 | TRUE | 6 | TRUE | 501 | 0.0825 | TRUE | $0.00 | - | Extreme range test for premium |
| 16 | $10,000.00 | TRUE | 5 | TRUE | 501 | 0.0825 | TRUE | $8,660.00 | - | Extreme range test for premium |

Code coverage achieved is: full boundary coverage, full statement coverage, full decision coverage and extreme range coverage.

The test cases support the description (logical expression).